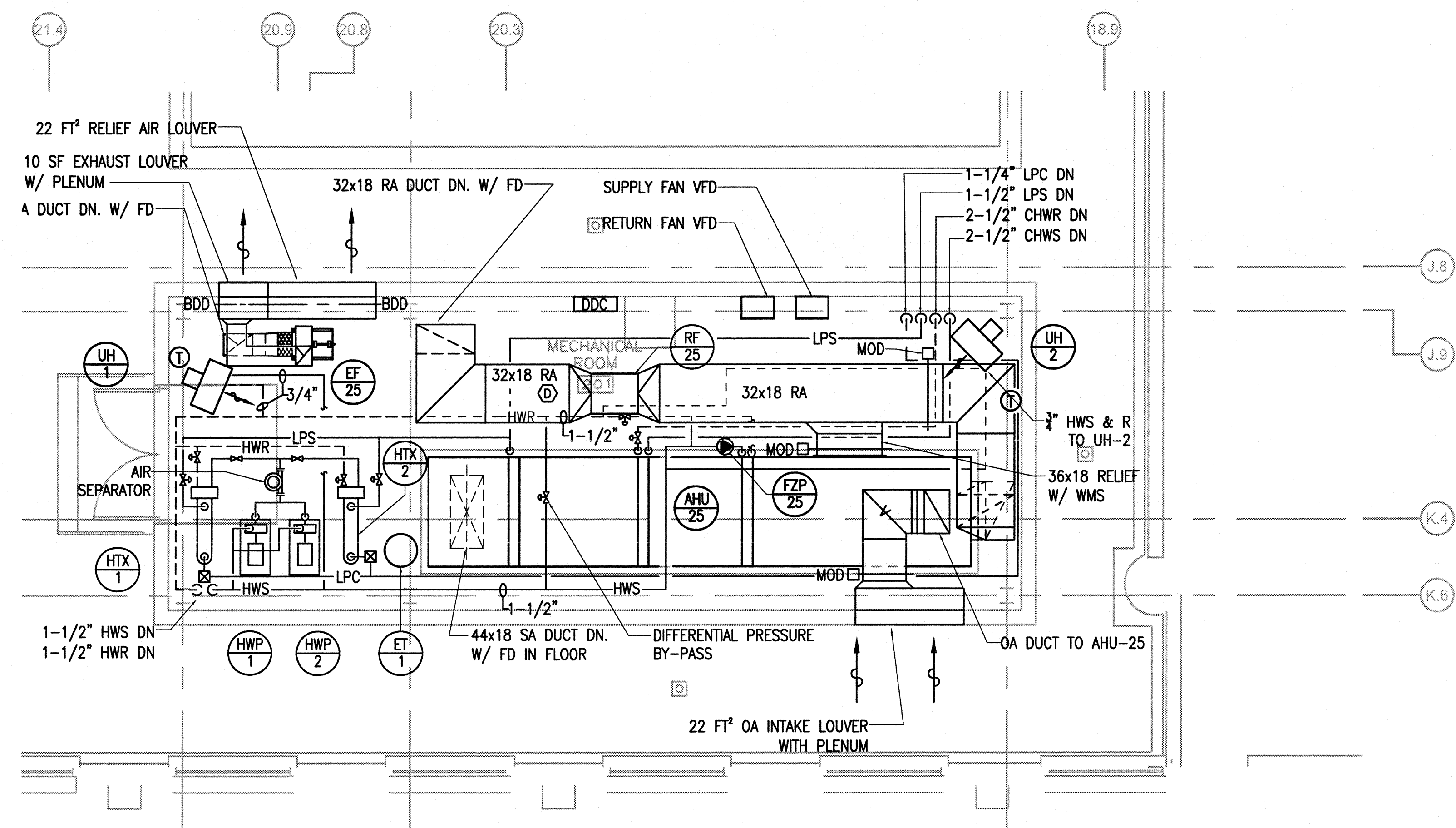
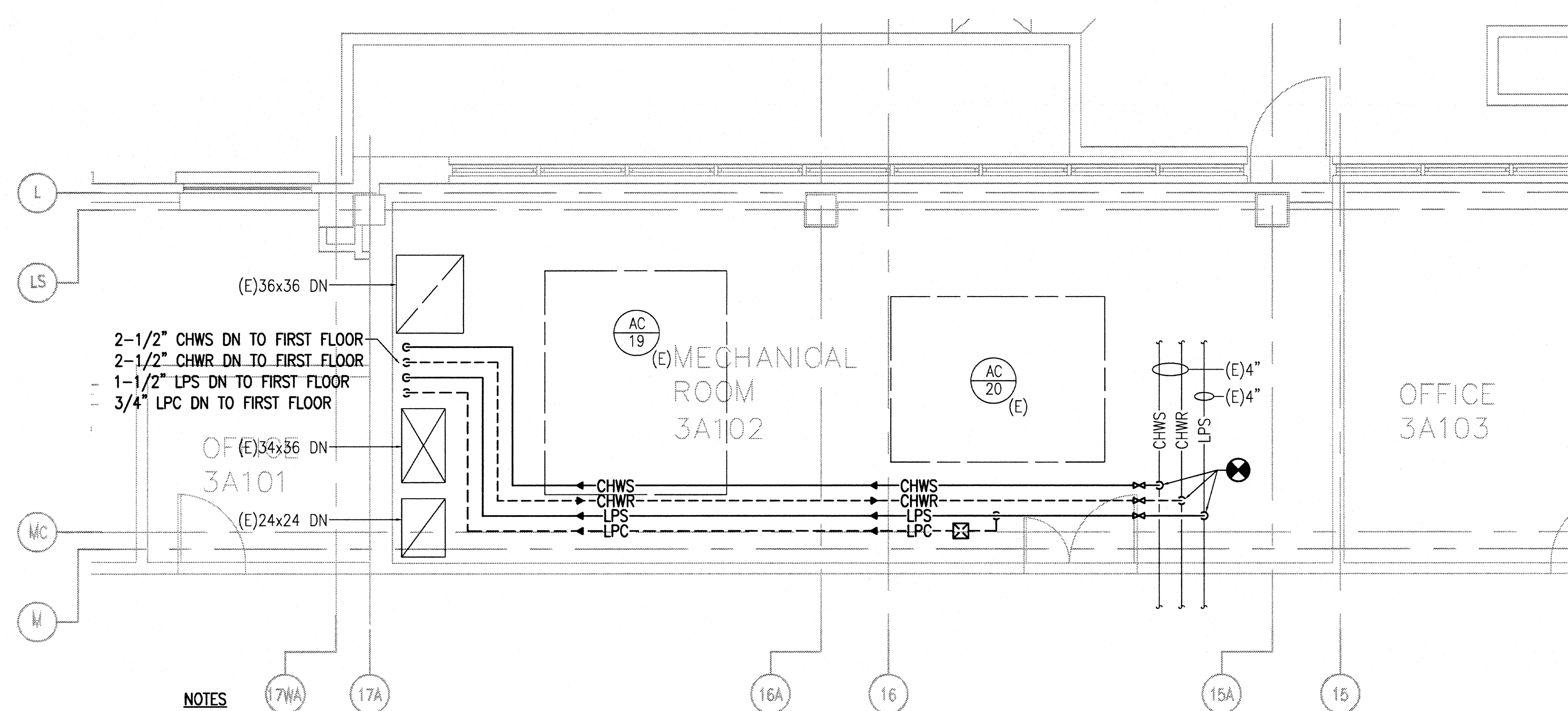


2 HVAC ZONING DIAGRAM
M501 SCALE: N.T.S.

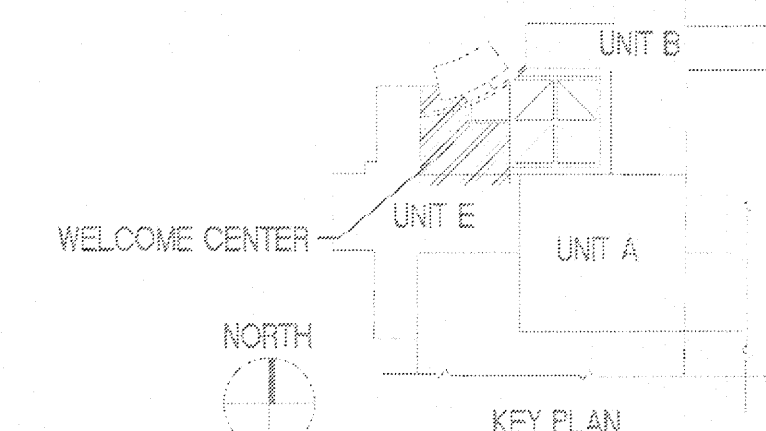




1 PARTIAL PLAN - MECHANICAL PENTHOUSE
M501 SCALE: 1/4" = 1'-0"

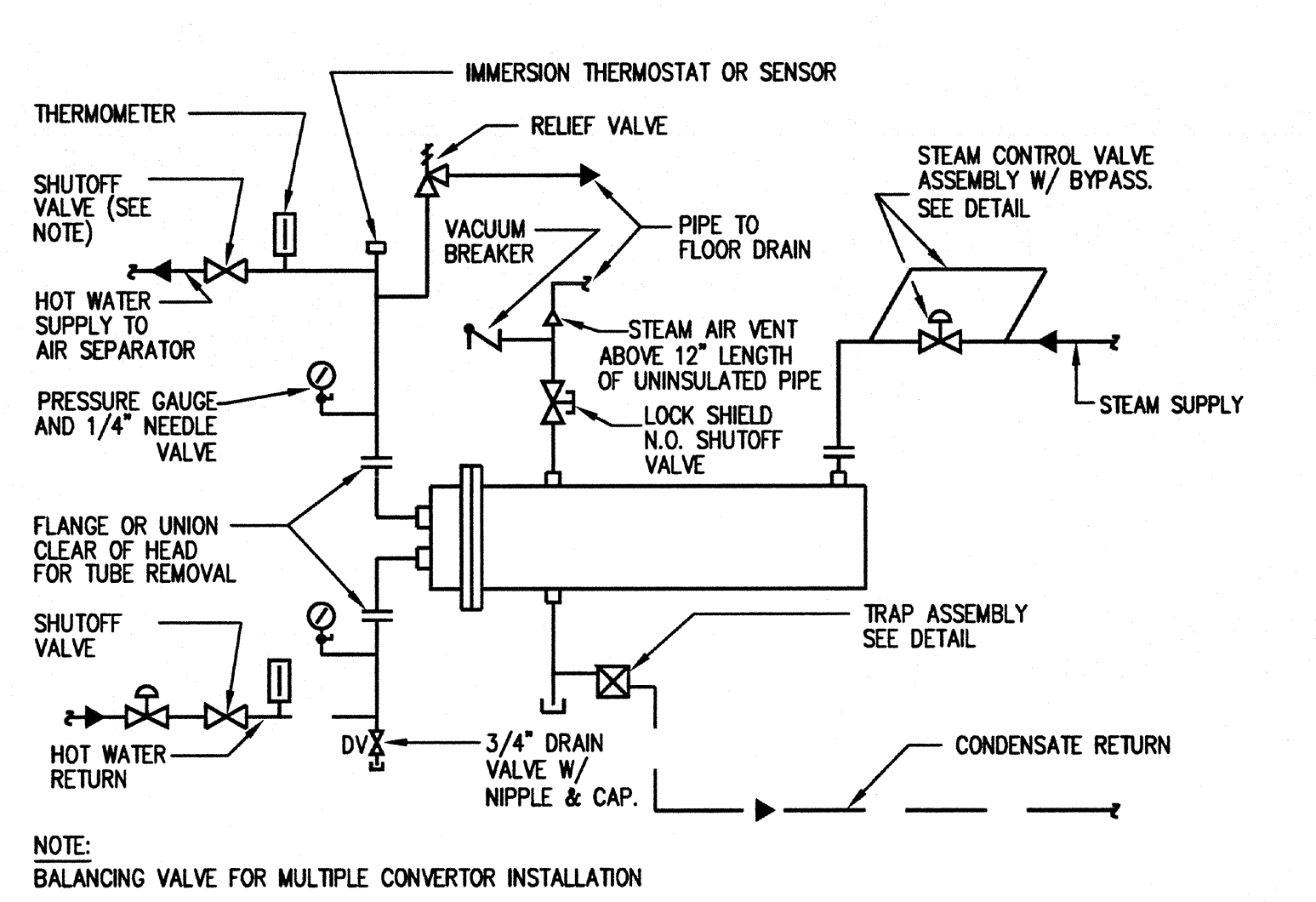
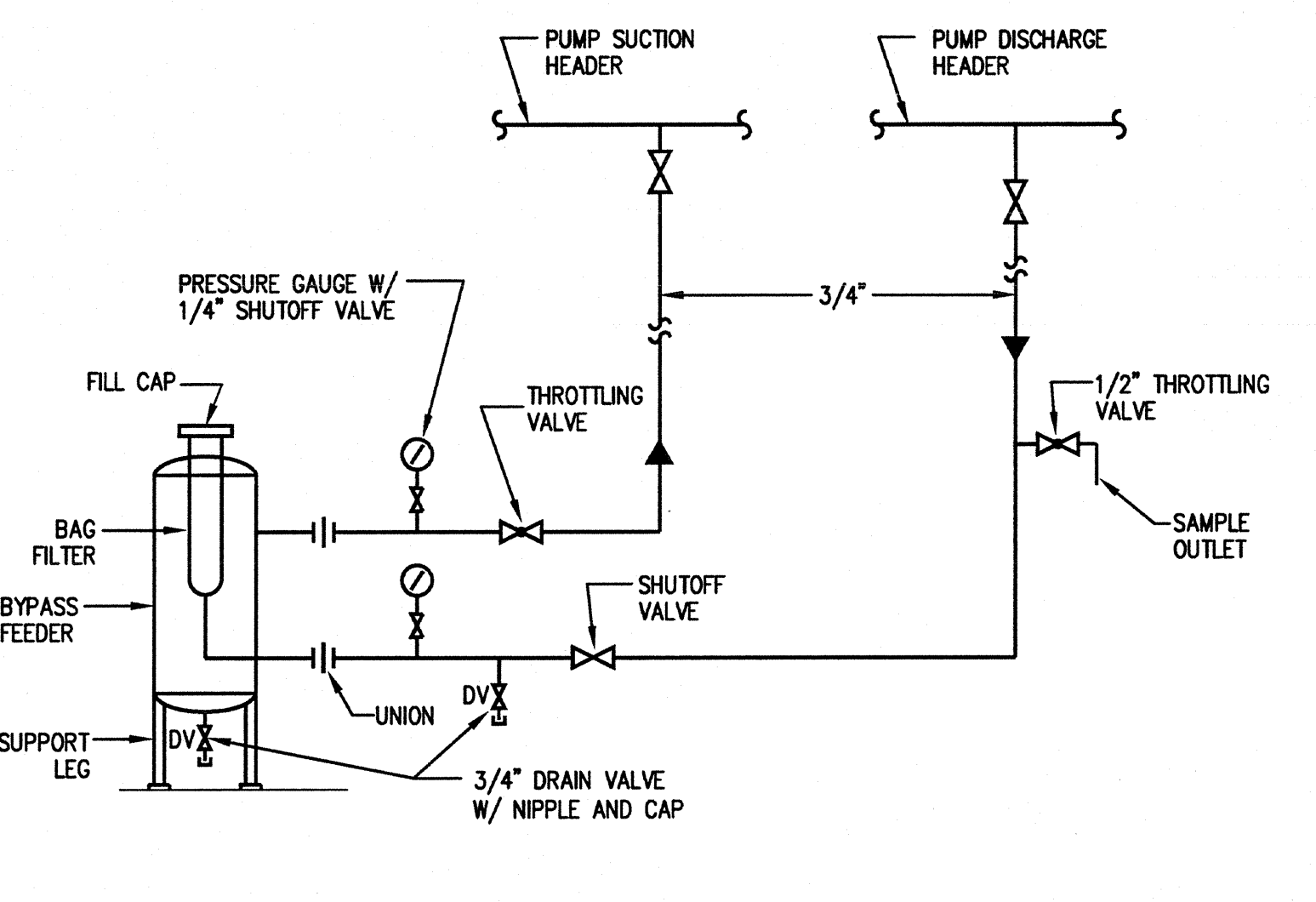
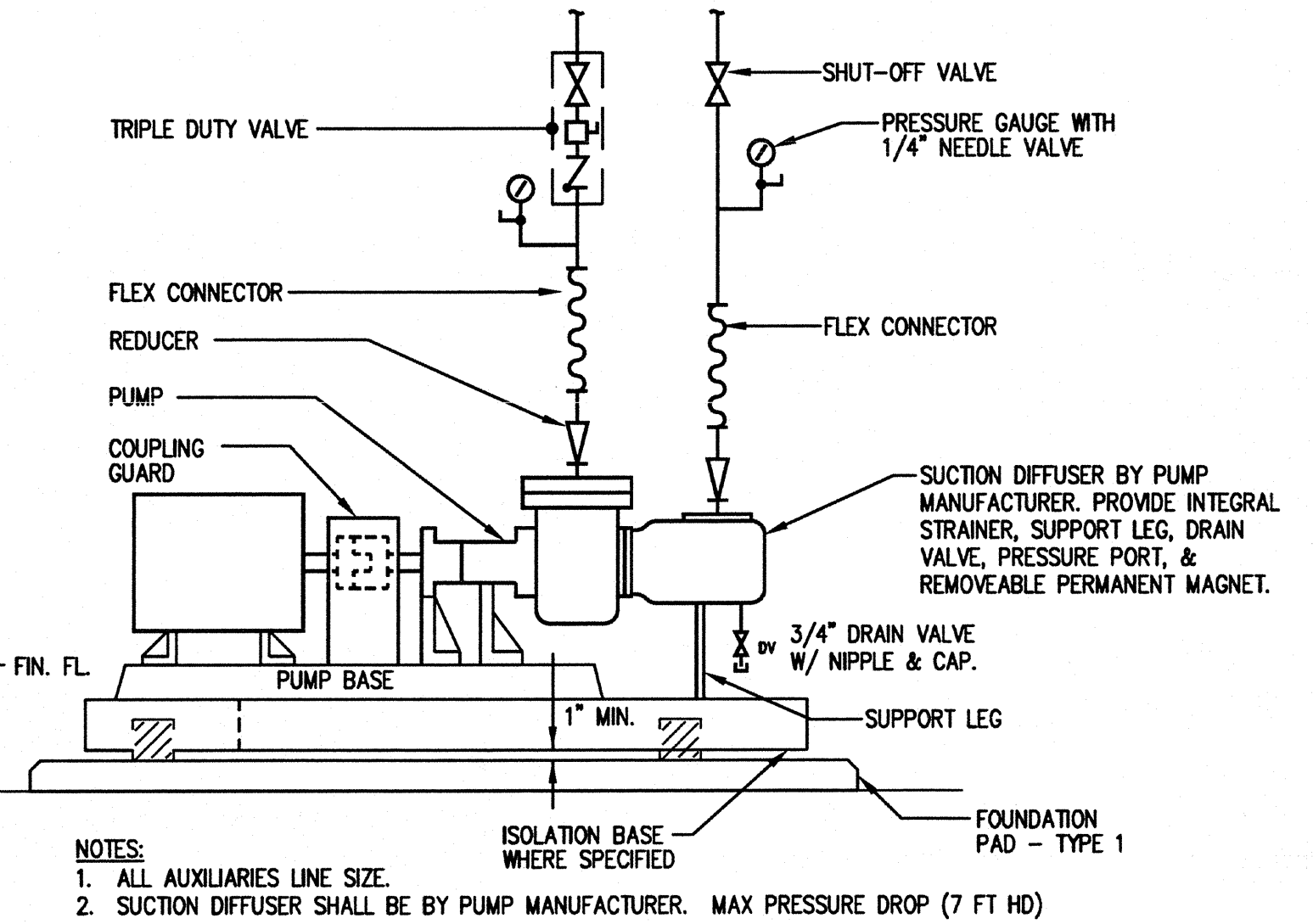
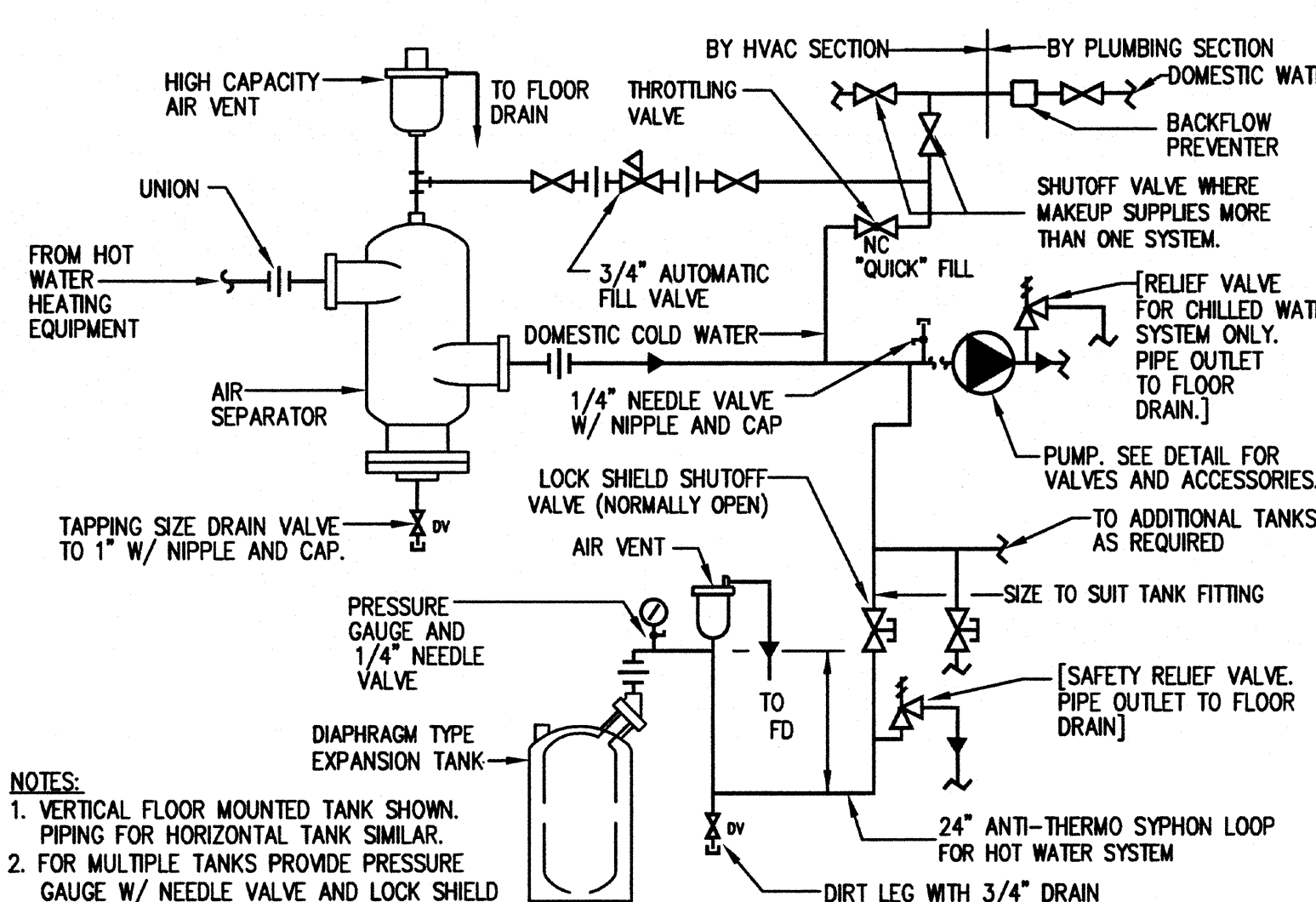
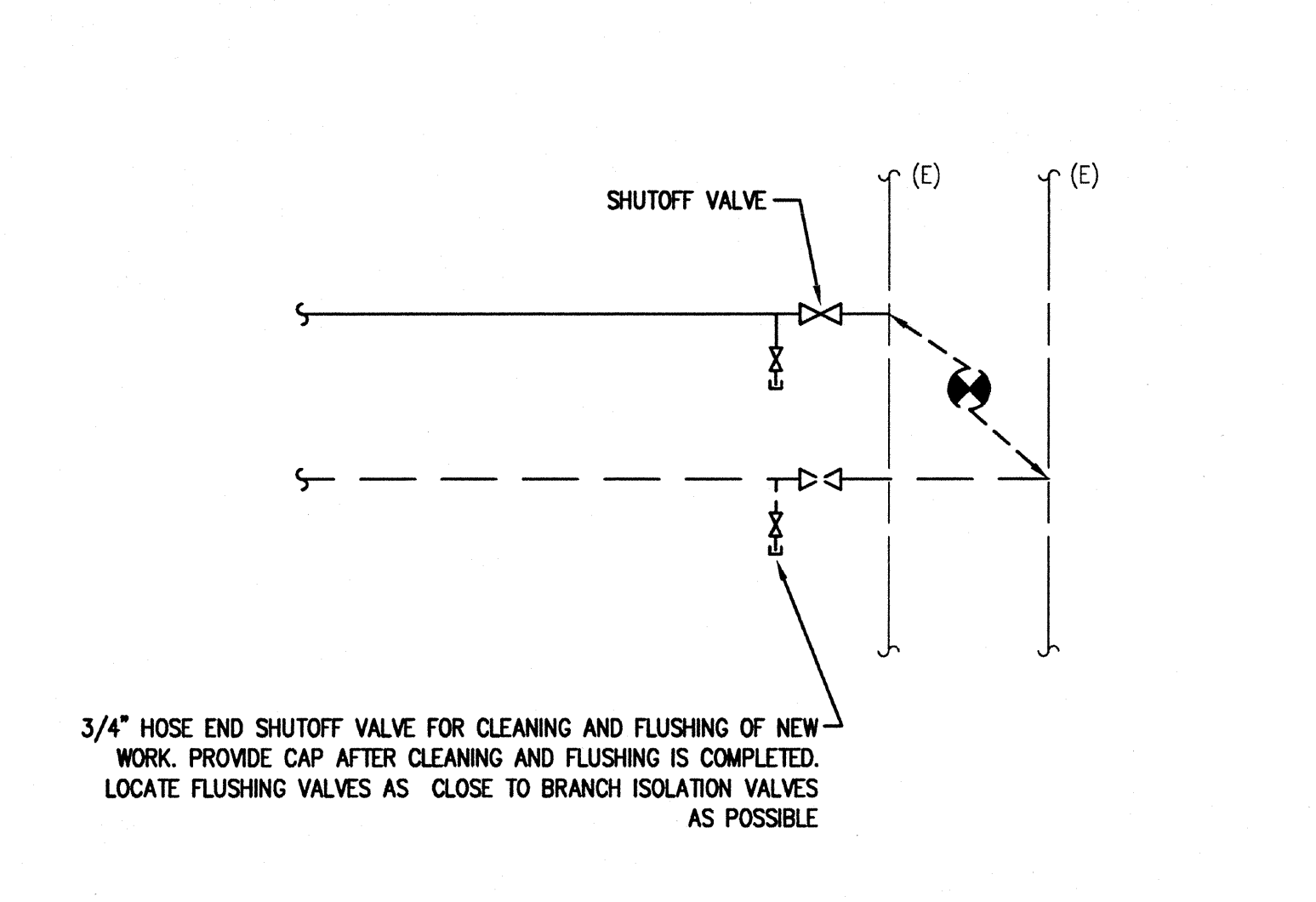
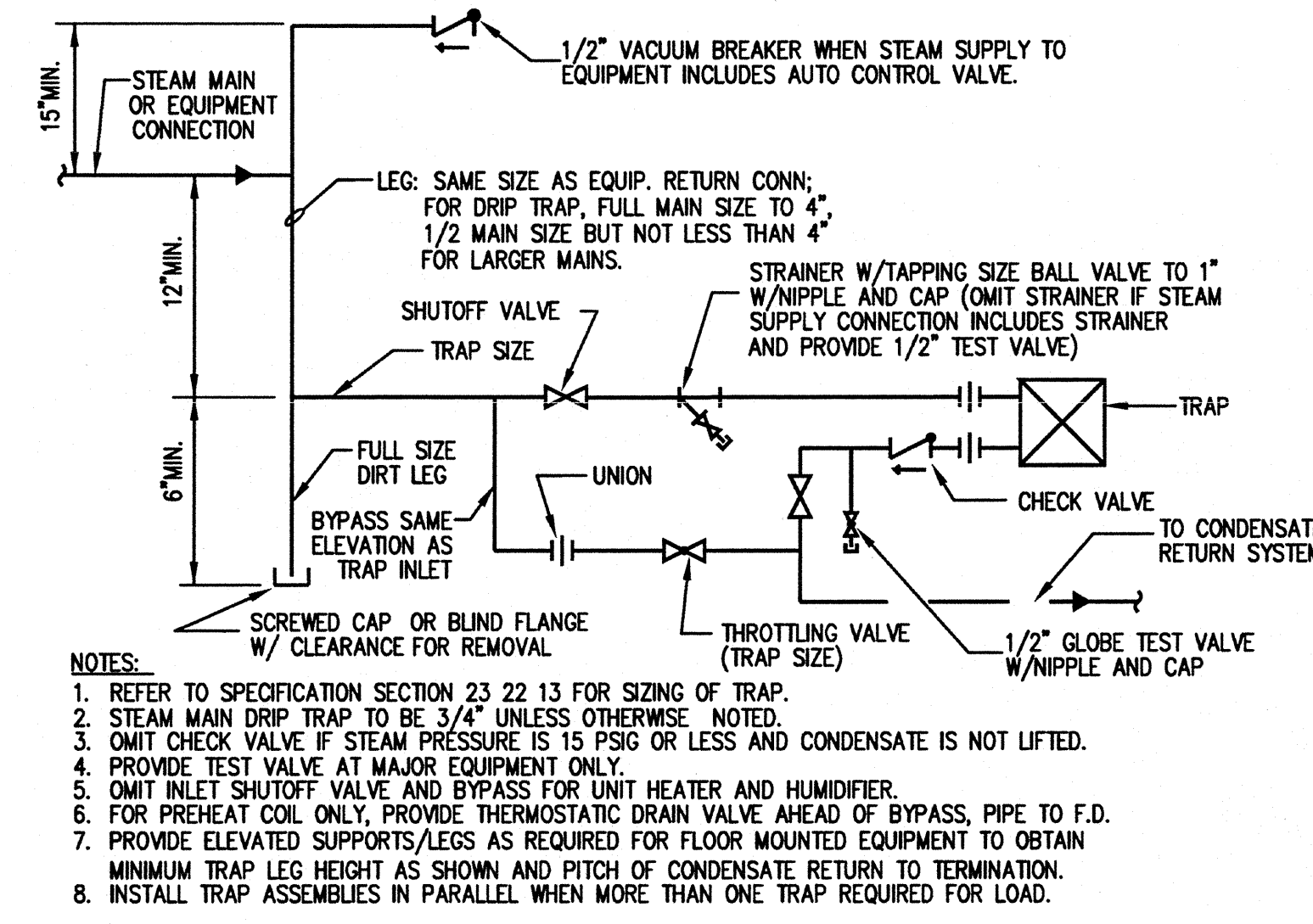
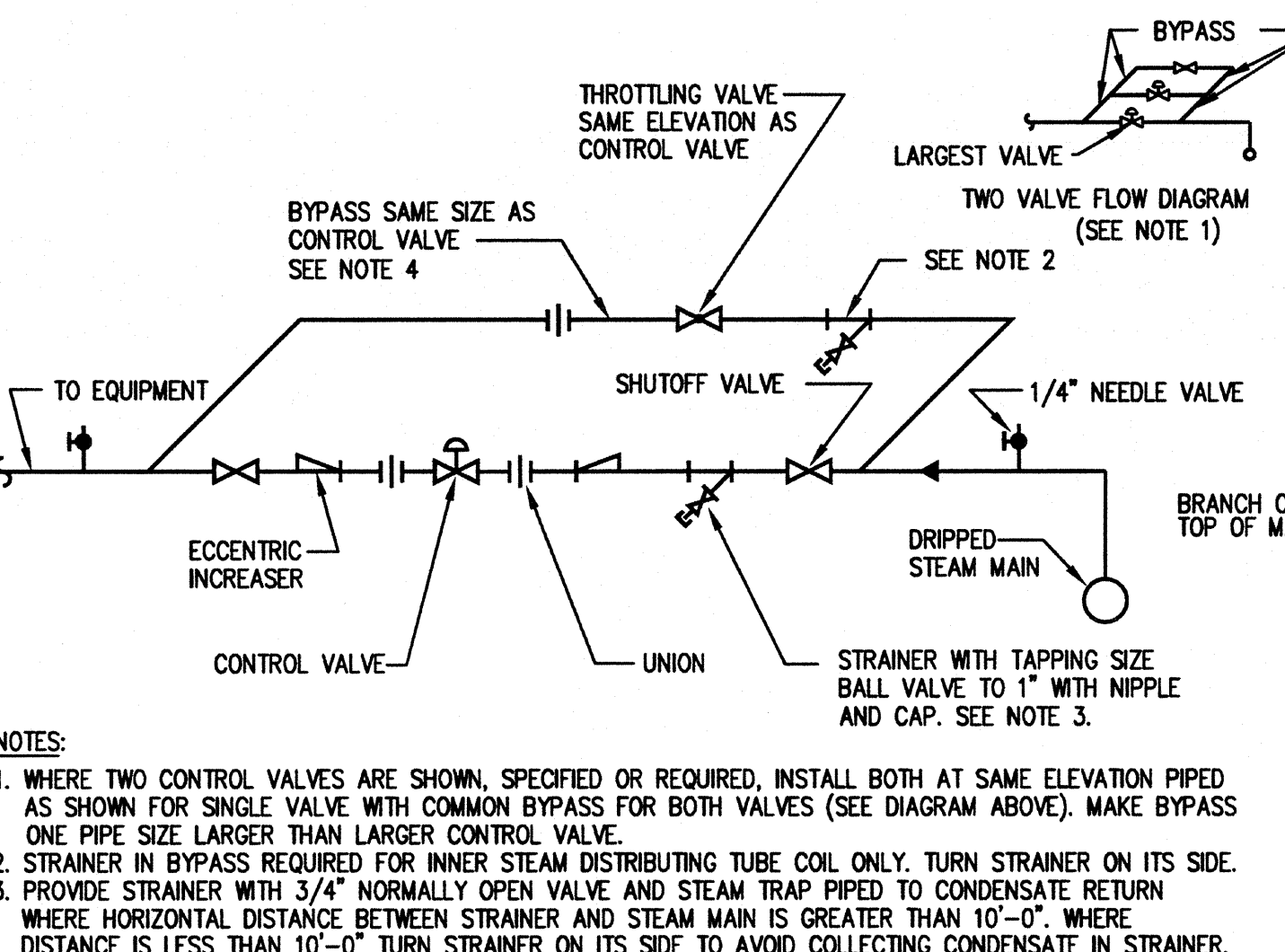
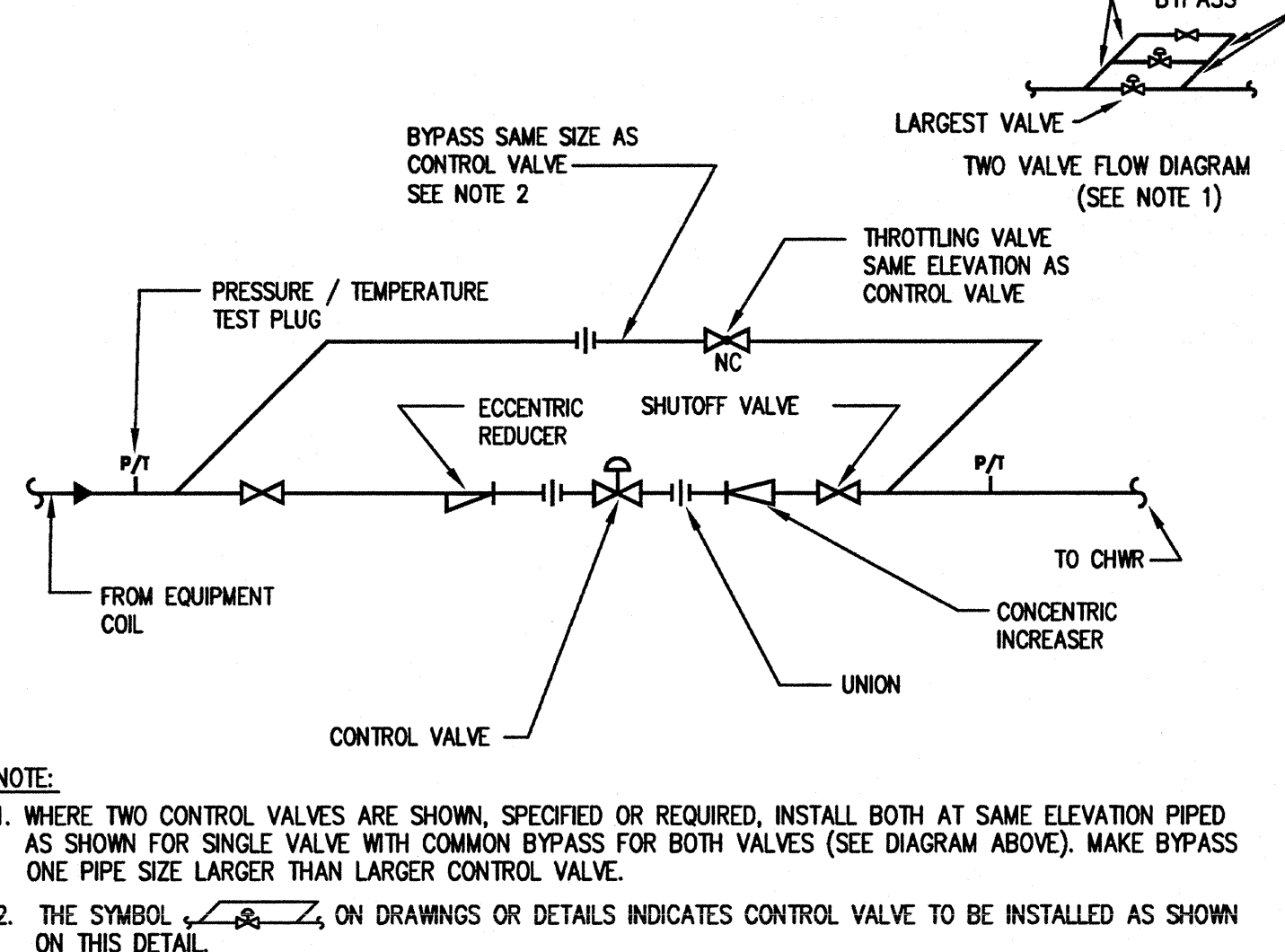
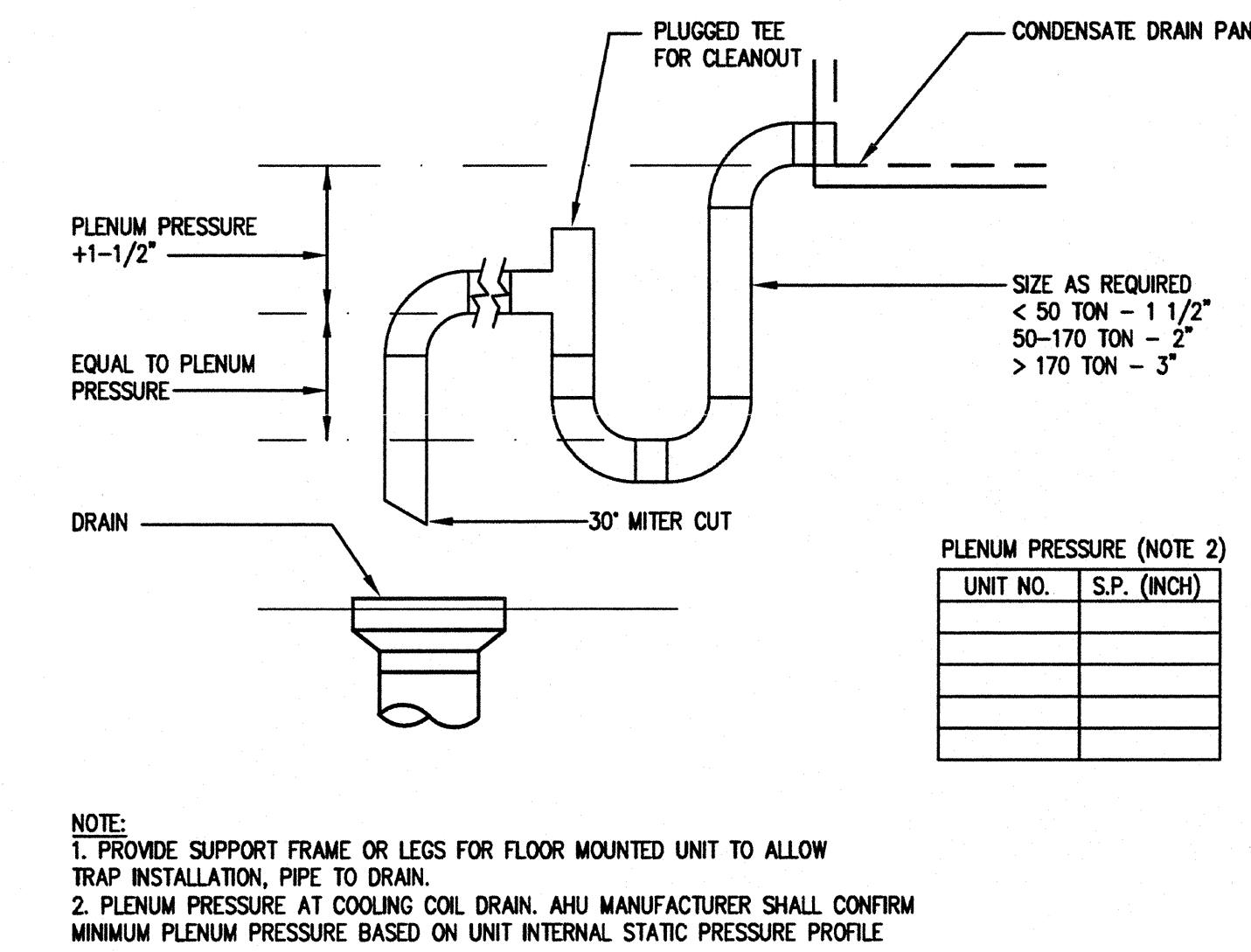
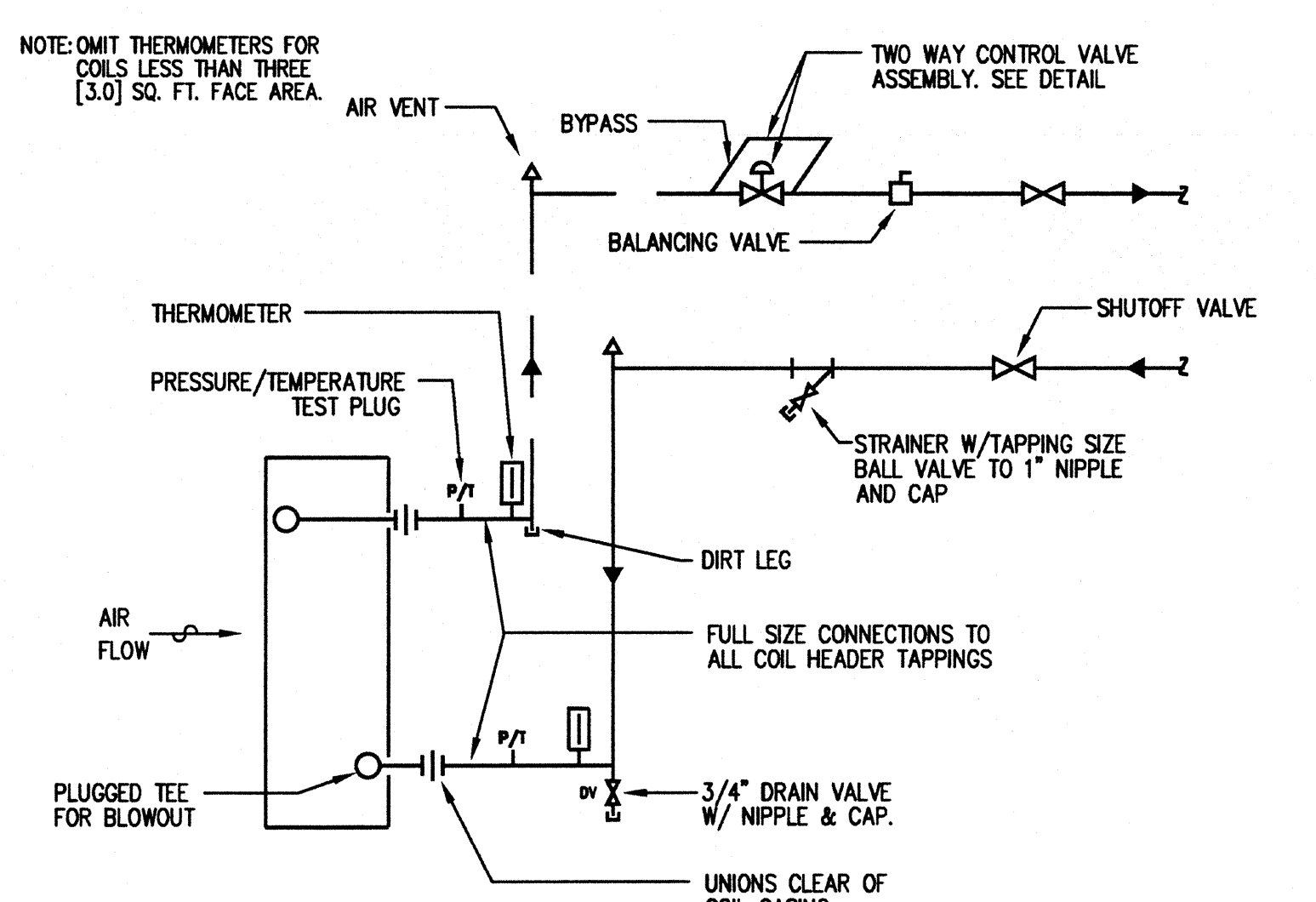
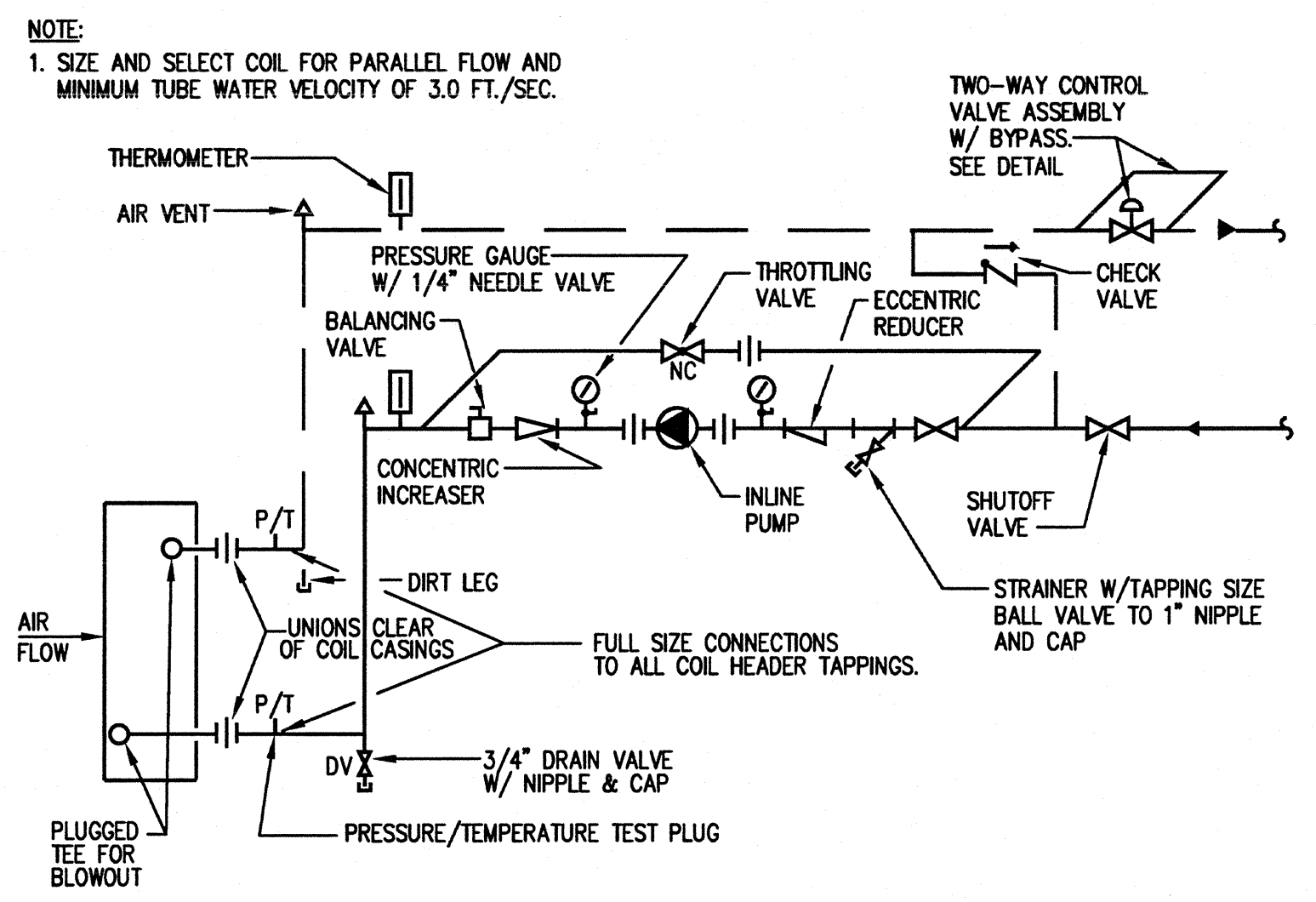
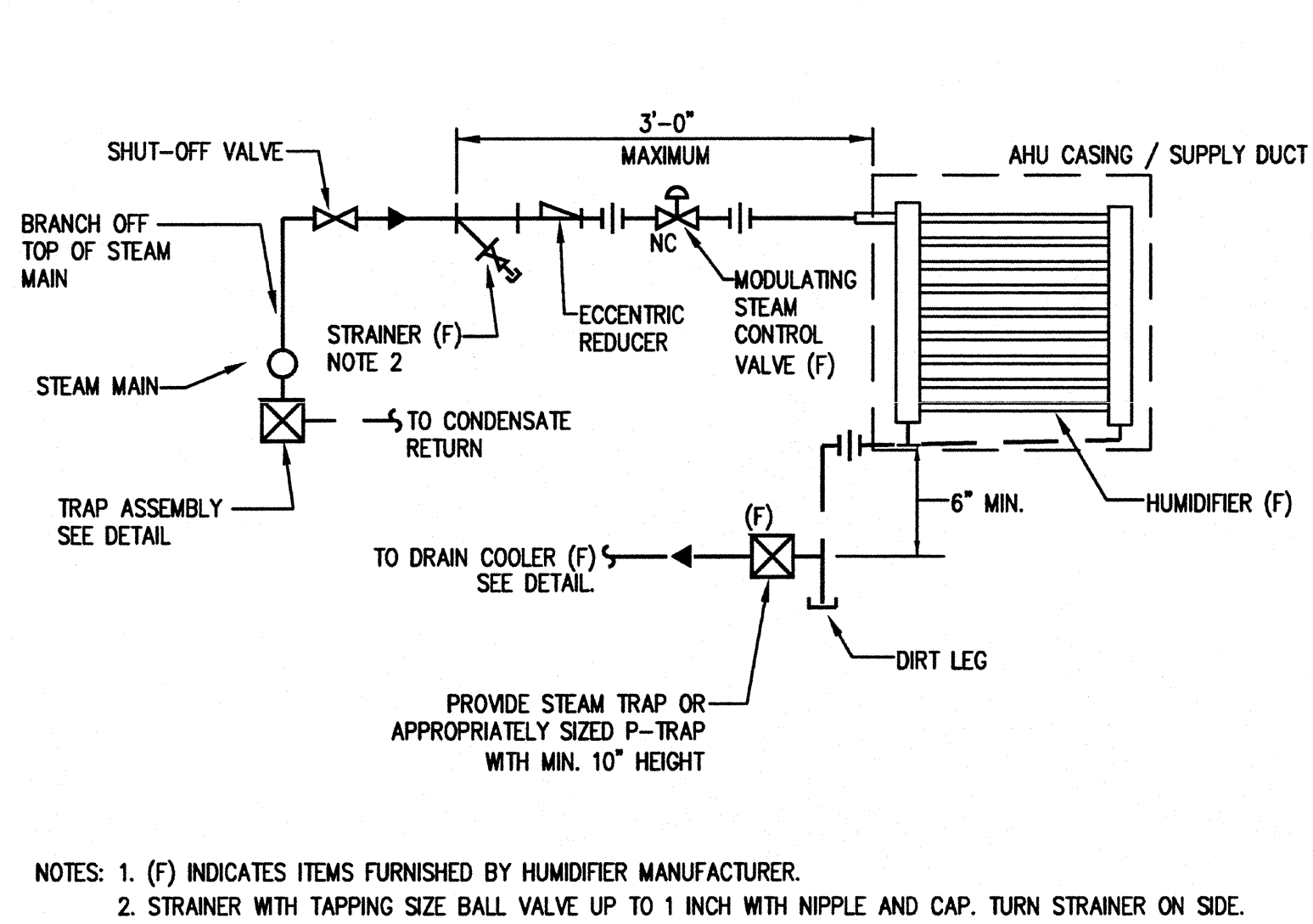


NOTES
1. PROVIDE ADDITIONAL OFFSETS AS REQUIRED TO AVOID CONFLICTS WITH EXISTING UTILITIES.

3 EXISTING THIRD FLOOR MECH. ROOM PARTIAL PLAN
M501 SCALE: 1/4" = 1'-0"

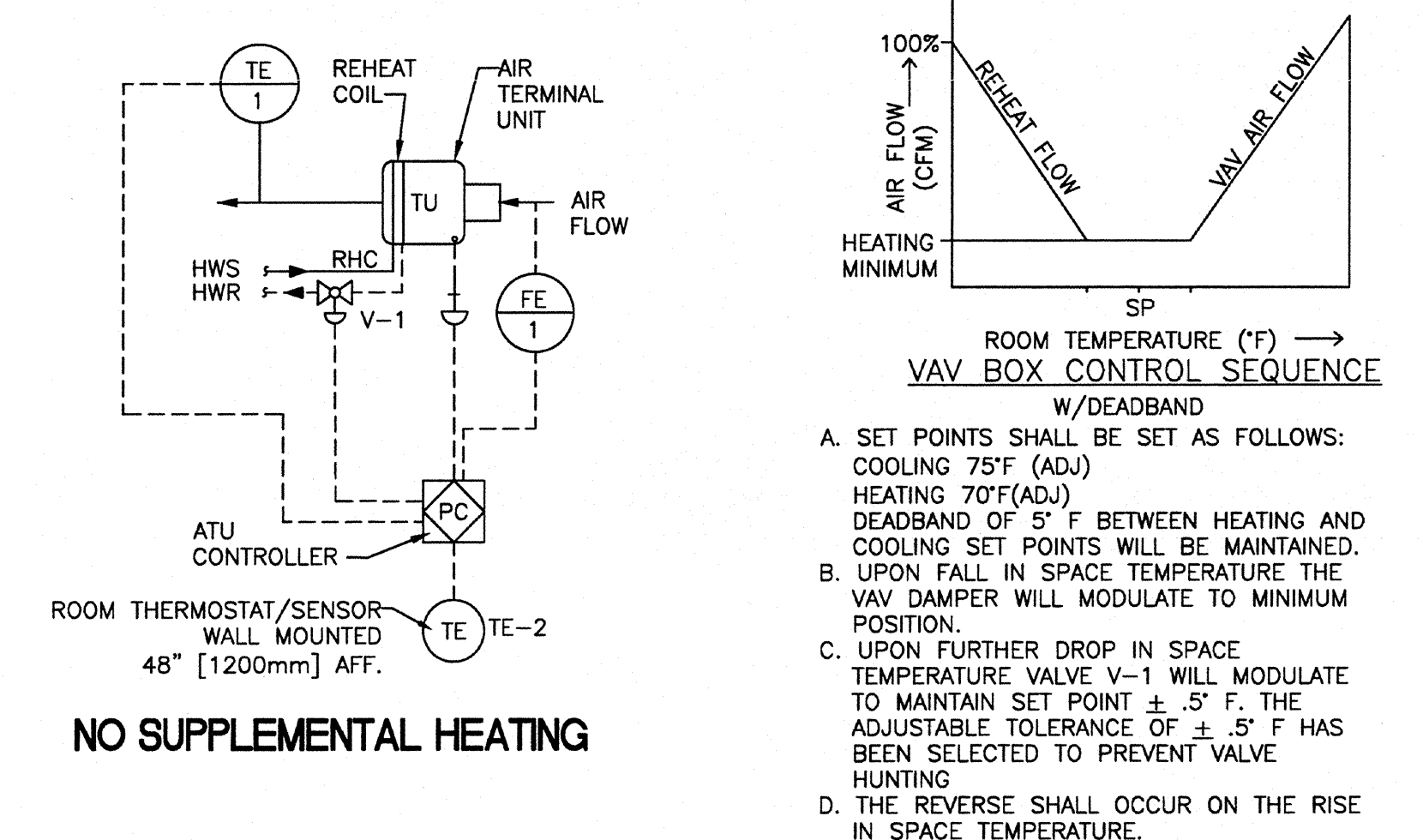
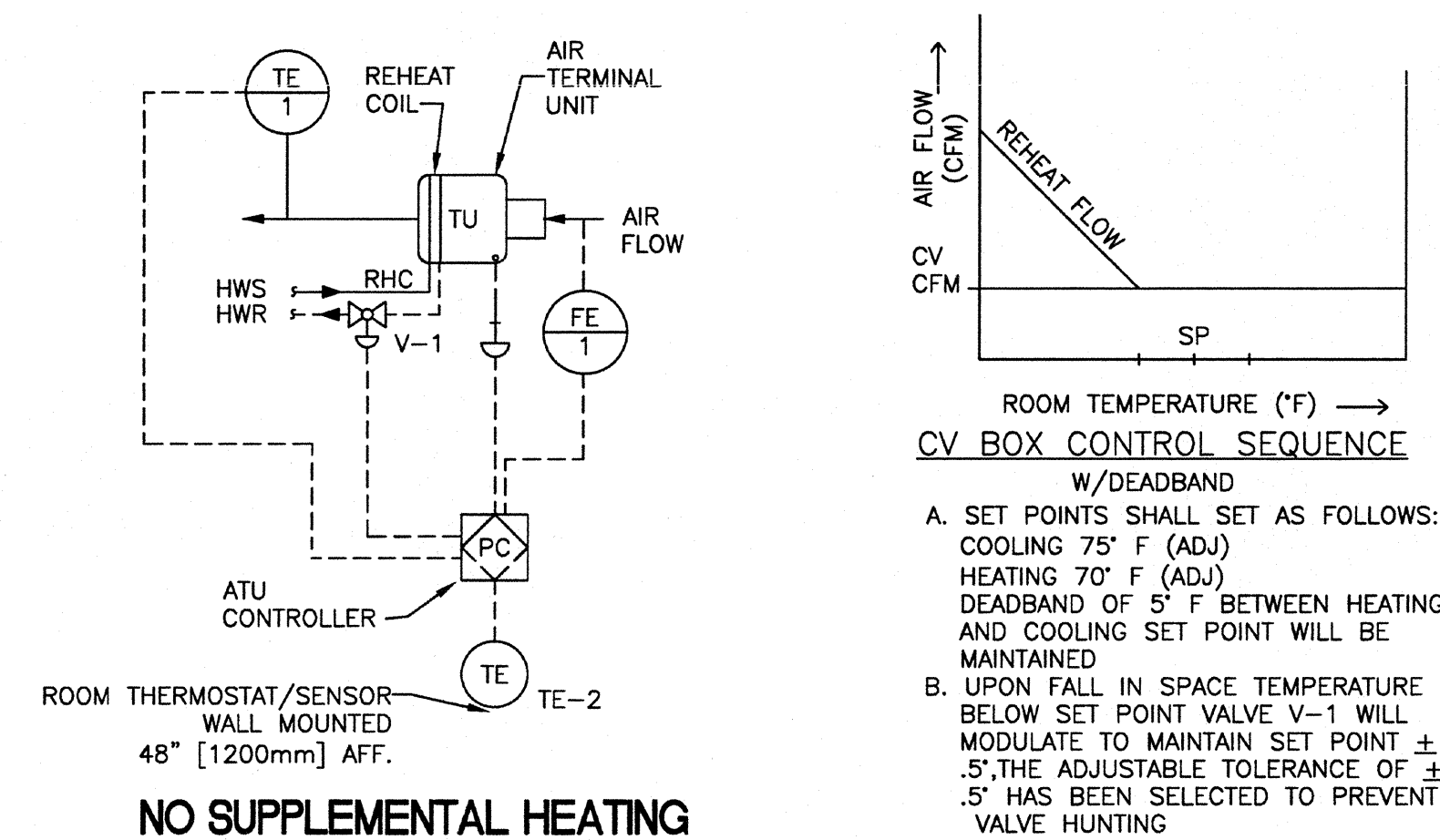
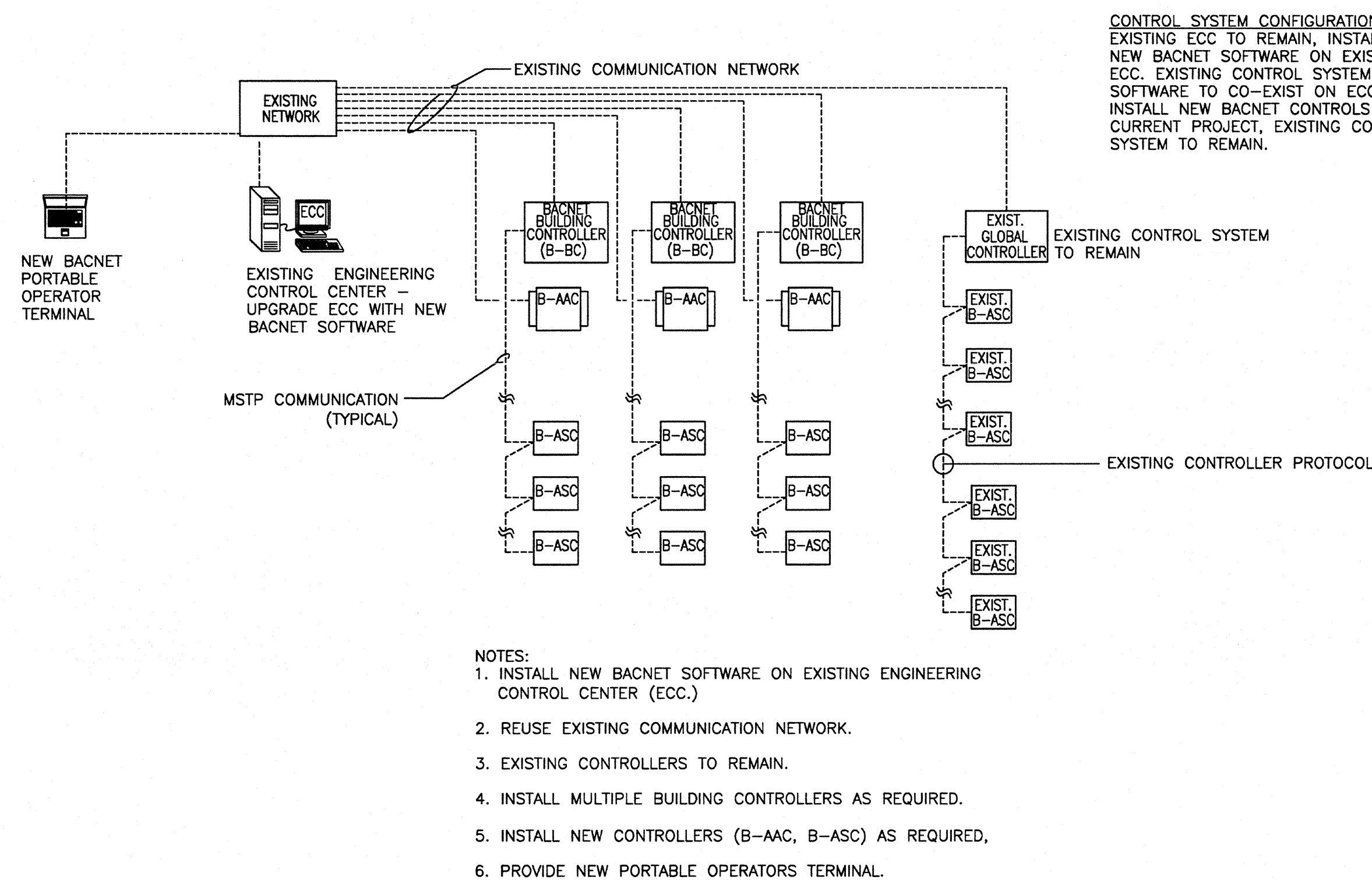



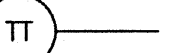
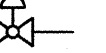




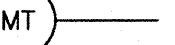
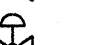

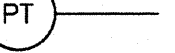
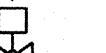

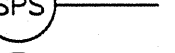



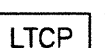















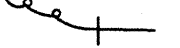




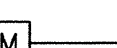

CONSULTANTS: ISSUE 1 - ISSUE FOR CONSTRUCTION 04.30.2013 95 % SUBMISSION 02.17.2012 75 % SUBMISSION 03.18.2011 25 % SUBMISSION 10.29.2010 Revisions: _____ Date: _____		ARCHITECT/ENGINEERS:  1025 Connecticut Avenue, NW Suite 900 Washington, DC 20036-5405 Tel: 202-467-1500 Fax: 202-296-8950		Drawing Title HVAC PARTIAL PLANS Approved Project Director _____	Project Title OF / OEF WELCOME CENTER DEPARTMENT OF VETERANS AFFAIRS VAMC Location Veterans Affairs Medical Center 50 Irving Street NW Washington DC Date 4-30-2013 Checked _____ Drawn TJR	Project Number 688-334 OF/OEF Building Number _____ Drawing Number M501	Office of Construction and Facilities Management  Department of Veterans Affairs
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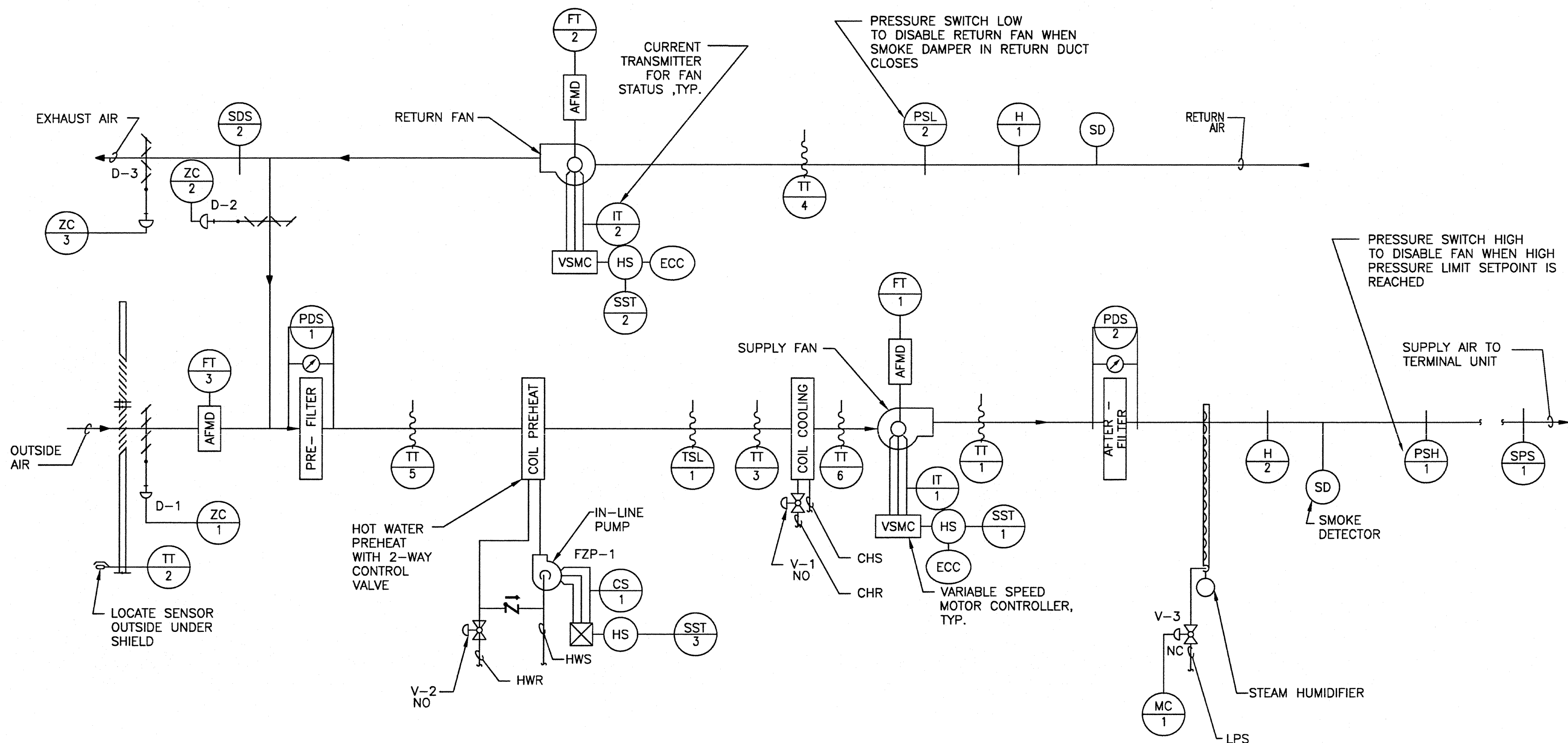
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ABBREVIATIONS		ABBREVIATIONS		ABBREVIATIONS		CONTROLS SYMBOLS		CONTROLS SYMBOLS		VALVE SYMBOLS	
A/E	ARCHITECT / ENGINEER	EA	EXHAUST AIR	MA	MIXED AIR		PRESSURE SWITCH HIGH		TEMPERATURE TRANSMITTER		MODULATING CONTROL VALVE
ACD	AUTOMATIC CONTROL DAMPER/MODULATING	EAT	ENTERING AIR TEMPERATURE	MAT	MIXED AIR TEMPERATURE		PRESSURE SWITCH LOW		TEMPERATURE TRANSMITTER, AVERAGING ELEMENT		MODULATING CONTROL BUTTERFLY VALVE
ACD-TP	AUTOMATIC CONTROL DAMPER,TWO POSITION	ECC	ENGINEERING CONTROL CENTER	MER	MECHANICAL EQUIPMENT ROOM		ELECTRONIC TO PNEUMATIC TRANSDUCER		MOISTURE (HUMIDITY) TRANSMITTER		TWO POSITION CONTROL VALVE
AF	AFTER FILTER	EF	EXHAUST FAN	MPS	MEDIUM PRESSURE STEAM		CARBON DIOXIDE TRANSMITTER		PRESSURE TRANSMITTER		THREE-WAY MODULATING CONTROL VALVE
AFF	ABOVE FINISHED FLOOR	ENT	ENTERING	NC	NORMALLY CLOSED		CARBON MONOXIDE TRANSMITTER		STATIC PRESSURE SENSOR		THREE-WAY TWO POSITION CONTROL VALVE
AFMD	AIR FLOW MEASURING DEVICE	ER	EXHAUST REGISTER	NTS	NOT TO SCALE		OCCUPANCY SENSOR		FLOW TRANSMITTER		
AHU	AIR-HANDLING UNIT	ESP	EXTERNAL STATIC PRESSURE	OA	OUTSIDE AIR		LOCAL TEMPERATURE CONTROL PANEL		CURRENT TRANSMITTER		
AMP	AMPLIFIER	EWT	ENTERING WATER TEMPERATURE	OAI	OUTSIDE AIRINTAKE PUMP		HVAC CONTROL PANEL		CONDUCTIVITY TRANSMITTER		
APD	AIR PRESSURE DROP	EX.	EXISTING	OAI	OUTSIDE AIRINTAKE PUMP		VARIABLE SPEED MOTOR CONTROLLER		SMOKE DETECTOR		
ATU	AIR TERMINAL UNIT	FTR	FIN TUBE RADIATION	P	PUMP		INTEGRATE CONTROL POINT ON REMOTE GRAPHICS WORKSTATION AT ENERGY CONTROL CENTER		PRESSURE DIFFERENTIAL TRANSMITTER		
BDD	BACKDRIFT DAMPER	F	FAHRENHEIT	PD	PRESSURE DROP		TEMPERATURE CONTROLLER. SEE SEQUENCE OF OPERATION		PRESSURE DIFFERENTIAL SWITCH		
C	CENTIGRADE (CELCIUS)	FCU	FAN COIL UNIT (4 PIPE)	PEF	PROPELLER (TYPE) EXHAUST FAN		PRESSURE CONTROLLER. SEE SEQUENCE OF OPERATION		HAND SWITCH (HAND-OFF-AUTO SWITCH)		
CC	COOLING COIL	FOUC	FAN COIL UNIT COOLING ONLY	PF	PRE-FILTER		SPEED CONTROLLER. SEE SEQUENCE OF OPERATION		VALVE OR DAMPER POSITION CONTROLLER		
CD-1	CONSTRUCTION DOCUMENTS (SUBMISSION1)	FCUH	FAN COIL UNIT HEATING ONLY	PHC	PREHEAT COIL		TEMPERATURE SWITCH, LOW (FREEZE/STAT)		TEMPERATURE SWITCH, HIGH (FREEZE/STAT)		
CD-2	CONSTRUCTION DOCUMENTS (SUBMISSION2)	RAT	RETURN AIR TEMPERATURE	R/E	RETURN OR EXHAUST		TEMPERATURE SENSING ELEMENT FOR TRANSMITTING TEMPERATURE TO EMCS (PROVIDE 12 INCHES [200mm] MINIMUM LENGTH IN DUCT WHEN SPACE PERMITS.)		SENSOR WITH AVERAGING ELEMENT TO TRANSMIT TEMPERATURE TO EMCS		
CHR	CHILLER WATER	FD	FIRE DAMPER	RA	RETURN AIR		ROOM THERMOSTAT/TRANSMITTER - WALL MOUNT		MOTOR STARTER		
CHS	CHILLED WATER RETURN	FF	FINAL FILTER	REA	RELIEF AIR		ROOM HUMIDISTAT (MOISTURE)/TRANSMITTER - WALL MOUNT		ELECTRIC OPERATED CONTROL DAMPER/OR VALVE		
CHS	CHILLED WATER SUPPLY	FM	FLOW METER	RF	RETURN FAN		HUMIDITY SENSOR				
CO2	CARBON DIOXIDE	FS	FLOW SWITCH	RH	RELATIVE HUMIDITY						
CP	CONDENSATE PUMP	FSAT	FREEZE/STAT	RHC	REHEAT COIL						
CR	CEILING REGISTER	HOA	HAND/OFF/AUTOMATIC	SA	SUPPLY AIR						
CS	CONDENSATE STORAGE TANK	HSTAT	HUMIDISTAT	SAT	SUPPLY AIR TEMPERATURE						
CSG	CLEAN STEAM GENERATOR	HUM	HUMIDIFIER UNIT MOUNTED	SCI	SPINAL CODE INJURY						
CT	COOLING TOWER	HTM	HUMIDIFIER TERMINAL	SD	SMOKE DETECTOR						
CU	CONDENSING UNIT	HW	HOT WATER	SD-1	SCHEMATIC DESIGN (SUBMISSION1)						
CUH	CABINET UNIT HEATER	HWC	HOT WATER COIL	SD-2	SCHEMATIC DESIGN (SUBMISSION2)						
CV	CONSTANT VOLUME	HHWC	HOT WATER HEATING COIL	SF	SUPPLY FAN						
D	CHILLED WATER COOLING COIL	HWP	HEATING HOT WATER PUMP	SH	STEAM HUMIDIFIER						
D-1	DAMPER AUTOMATIC	HWR	HEATING HOT WATER RETURN	SH	STATIC PRESSURE						
D-2	RETURN AIR DAMPER	HWS	HEATING HOT WATER SUPPLY	SPD	SUPPLY PROCESS AND DISTRIBUTION						
D-3	RELIEF AIR DAMPER	HWHU	HOT WATER UNIT HEATER	SPS	STATIC PRESSURE SENSOR						
Db	DRY-BULB TEMPERATURE	HX	HEAT EXCHANGER	SWHX	STEAM TO WATER HEAT EXCHANGER						
DD-1	DESIGN DEVELOPMENT	I/O	INPUT/OUTPUT	TSP	TOTAL STATIC PRESSURE						
DD-2	DESIGN DEVELOPMENT	ID	INSIDE DAMETER	TSAT	THERMOSTAT						
DD-2	DESIGN DEVELOPMENT	IN	INCHES	TU	TERMINAL UNIT						
DD-2	DESIGN DEVELOPMENT	I	INCHES	UH	UNIT HEATER						
DD-2	DESIGN DEVELOPMENT	LPS	LOW PRESSURE STEAM	UL	UNDERWRITERS LABORATORY						
DD-2	DESIGN DEVELOPMENT	LPS	LOW PRESSURE STEAM (CLEAN)	V	VALVE						
DD-2	DESIGN DEVELOPMENT	LTCP	LOCAL TEMPERATURE CONTROL PANEL	VAV	VARIABLE AIR VOLUME						
DD-2	DESIGN DEVELOPMENT	LVC	LEAVING	VFD	VARIABLE FREQUENCY DRIVE						
DD-2	DESIGN DEVELOPMENT	LWT	LEAVING WATER TEMPERATURE	VHA	VETERANS HEALTH ADMINISTRATION						
DD-2	DESIGN DEVELOPMENT			VSD	VARIABLE SPEED DRIVE						
DD-2	DESIGN DEVELOPMENT			VUH	VERTICAL UNIT HEATER						
DD-2	DESIGN DEVELOPMENT			Wb	WET-BULB (TEMPERATURE)						
DD-2	DESIGN DEVELOPMENT			WEF	WALL EXHAUST FAN						
DD-2	DESIGN DEVELOPMENT			WFV	WATER FLOW CONTROL VALVE						

		CONSULTANTS:						ARCHITECT/ENGINEERS:		EWING COLE 1025 Connecticut Avenue, NW Suite 900 Washington, DC 20036-5405 Tel: 202-467-1500 Fax: 202-296-8950		Drawing Title TEMPERATURE CONTROL DIAGRAMS		Project Title OIF / OEF WELCOME CENTER DEPARTMENT OF VETERANS AFFAIRS VAMC		Project Number 688-334 OIF/OEF		Office of Construction and Facilities Management	
												Approved Project Director		Location Veterans Affairs Medical Center 50 Irving Street NW Washington DC		Drawing Number			
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1 VARIABLE AIR VOLUME AIR HANDLING UNIT AHU-25 WITH MINIMUM OUTSIDE AIR CONTROL DIAGRAM
NTS

SEQUENCE OF OPERATION FOR VARIABLE AIR VOLUME AIR HANDLING UNIT WITH MINIMUM OUTSIDE AIR

1. GENERAL

- 1.1 UNIT IS NORMALLY STARTED AND STOPPED REMOTELY AT THE ECC. H-0-A SWITCH SHALL BE KEPT IN THE "AUTO" POSITION. "HAND" AND "OFF" POSITIONS SHALL BE USED ONLY FOR MAINTENANCE. WHEN THE UNIT IS "OFF" D-1 AND D-3 SHALL BE FULLY CLOSED. WHEN THE UNIT IS "ON" D-1, D-2 AND D-3 SHALL MODULATE IN ACCORDANCE WITH THE SEQUENCE INDICATED HEREIN.
- 1.2 STARTUP: WHEN UNIT IS INDEXED TO START, ALL ASSOCIATED SMOKE DAMPERS IN DUCTS SHALL OPEN, SUPPLY AND RETURN FANS SHALL BE STARTED SIMULTANEOUSLY AND SHALL OPERATE AS A SYSTEM. SUPPLY FAN SHALL NOT OPERATE IF RETURN FAN FAILS TO OPERATE AND RETURN FAN SHALL NOT OPERATE IF SUPPLY FAN FAILS TO OPERATE.
2. WARM-UP/COOL-DOWN CYCLE
- 2.1 CYCLE SHALL BE INITIATED PRIOR TO OCCUPANCY IN ORDER TO WARMUP/COOL DOWN THE BUILDING BY OCCUPIED TIME. OUTSIDE AIR TEMPERATURE TT-2 AND BUILDING TEMPERATURES SHALL BE MEASURED IN ORDER TO DETERMINE WARM-UP/COOL DOWN TIME. VARIABLE AND CONSTANT VOLUME AIR TERMINAL UNITS SHALL REMAIN UNDER CONTROL.
- 2.2 WARM-UP: SUPPLY AND RETURN FANS SHALL START UP; HOWEVER EXHAUST FAN 25 SHALL REMAIN D-1 AND EXHAUST AIR DAMPER D-3 SHALL REMAIN CLOSED AND RETURN AIR DAMPER D-2 SHALL BE OPEN DURING WARM-UP. ALSO DURING WARM-UP, THE SUPPLY FAN SHALL BE LIMITED TO THE CAPACITY OF THE RETURN FAN AND THE FAN DIFFERENTIAL SHALL BE ZERO. THE SUPPLY AIR TEMPERATURE TT-1 SHALL BE INCREASED TO 65 DEGREES F (ADJUSTABLE AT THE ECC) FOR WARM UP AND THE COOLING COIL VALVE V-1 SHALL REMAIN CLOSED.
- 2.3 COOL DOWN: THE SUPPLY AIR TEMPERATURE TT-1 SHALL REMAIN AT 55 DEGREES F (ADJUSTABLE AT THE ECC) AND THE PREHEAT VALVE V-2 SHALL BE CLOSED. COOL DOWN TEMPERATURE CONTROL SHALL BE IN ACCORDANCE WITH OCCUPIED MODE. TEMPERATURE CONTROL INDICATED HEREIN EXCEPT IF ECONOMIZING IS NOT AVAILABLE, OUTSIDE AIR DAMPER D-1 SHALL REMAIN CLOSED.

3. OCCUPIED MODE TEMPERATURE CONTROL

- 3.1 SUPPLY AIR TEMPERATURE, SENSED BY TT-1, SHALL BE MAINTAINED AT SETPOINT VIA DIGITAL CONTROL PANEL BY MODULATING V-1 OR D-1, D-2 AND D-3 OR V-2 IN SEQUENCE.
- 3.2 WHEN THE TEMPERATURE OF THE OUTSIDE AIR, SENSED BY TT-2, IS ABOVE 65°F (18.3°C), THE DIGITAL CONTROL PANEL SHALL MODULATE D-1 TO MINIMUM OUTSIDE AIR AND D-3 TO MINIMUM RELIEF POSITION. THE DIGITAL CONTROL PANEL SHALL MODULATE V-1 TO MAINTAIN THE SUPPLY AIR TEMPERATURE, SENSED BY TT-1.
- 3.3 WHEN THE TEMPERATURE OF THE OUTSIDE AIR, SENSED BY TT-2, IS BETWEEN 65°F (18.3°C) AND THE SUPPLY AIR TEMPERATURE SETPOINT SENSED BY TT-1, DAMPER D-2 SHALL MODULATE TO FULLY CLOSE AND D1 AND D3 SHALL MODULATE TO BE FULLY OPEN (MAXIMUM OUTSIDE AIR POSITION). THE DIGITAL CONTROL PANEL SHALL MODULATE V-1 TO MAINTAIN THE SUPPLY AIR TEMPERATURE, SENSED BY TT-1.
- 3.4 WHEN THE TEMPERATURE OF THE OUTSIDE AIR, SENSED BY TT-2, IS BELOW THE SUPPLY AIR TEMPERATURE SETPOINT, SENSED BY TT-1, DAMPERS D1 AND D2 SHALL MODULATE TO MAINTAIN THE SCHEDULED SUPPLY AIR TEMPERATURE AND THE DIGITAL CONTROL PANEL SHALL CONTROL D-3 TO MODULATE TO MAINTAIN STATIC RELIEF PRESSURE. INITIALLY SET A (0A +0.02) IN. W.G. (ADJUSTABLE AT ECC) SENSED AT SPS-2. IF D-2 IS OPEN AND D-1 IS CLOSED TO MINIMUM OUTSIDE AIR AND D-3 IS IN MINIMUM RELIEF POSITION, THE PREHEAT COIL IN-LINE PUMP P-1 SHALL START, AND V-2 SHALL MODULATE OPEN TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT, SENSED BY TT-1.
- 3.5 SUPPLY AIR TEMPERATURE RESET: IF THE UNIT COOLING COIL VALVE V-1 IS MODULATED TO ANY OPEN POSITION AND ALL THE ATU ARE AT THEIR MINIMUM SETTINGS OR CALLING FOR REHEAT, RESET THE SUPPLY AIR TEMPERATURE TT-1 UPWARD TO THE WARMEST SUPPLY AIR TEMPERATURE SETPOINT THAT SATISFIES ALL THE ZONE COOLING REQUIREMENTS. CONTINUE TO RESET THE SUPPLY AIR TEMPERATURE UPWARDS TO A MAXIMUM OF 65 DEGREES F, UNTIL THE POSITION OF THE WORST CASE BOX IS 90% OPEN. UPON A RISE IN RETURN AIR HUMIDITY H-1 ABOVE SETPOINT OF 55% (ADJUSTABLE AT ECC), SUPPLY AIR TEMPERATURE TT-1 SHALL BE RESET TO DESIGN SETPOINT UNTIL RETURN HUMIDITY DROPS BELOW 45% (ADJUSTABLE AT ECC). USE OF SUPPLY AIR TEMPERATURE RESET IS VIABLE DURING HEATING MODE ONLY.

4. AIR FLOW CONTROL

- 4.1 THE SUPPLY AIR FLOW SHALL BE CONTROLLED BY THE DIGITAL CONTROL PANEL. MODULATING THE SUPPLY FAN VARIABLE SPEED MOTOR CONTROLLER TO MAINTAIN 1.0" (25mm) OF DUCT STATIC PRESSURE (FIELD ADJUSTABLE), SENSED BY SPS-1. RESET STATIC PRESSURE BASED ON ACTUAL BUILDING LOAD BY POLLING ALL ATU TO DETERMINE THE AMOUNT OF STATIC PRESSURE REDUCTION TO CAUSE THE MOST OPEN BOX DAMPER TO OPEN MORE THAN THE MINIMUM VALUE BUT NOT MORE THAN THE MAXIMUM VALUE AND RESET THE STATIC PRESSURE ACCORDINGLY. STATIC PRESSURE SHALL BE SUFFICIENT TO SUPPLY THE REQUIRED AIRFLOW AT THE WORST CASE BOX.
- 4.2 THE DIGITAL CONTROL PANEL, USING TOTAL SUPPLY AIR AND RETURN AIR FLOW SIGNALS, SHALL RESET THE RETURN AIR FAN VSMC TO MAINTAIN A CONSTANT AIR FLOW DIFFERENCE BETWEEN THE SUPPLY AIR AND THE RETURN AIR EQUAL TO MINIMUM OUTSIDE AIR.
- 4.3 HIGH PRESSURE SENSOR PSH-1 LOCATED AT THE SUPPLY FAN DISCHARGE, SHALL PREVENT THE SUPPLY FAN FROM DEVELOPING OVER 3" (75mm) OF STATIC PRESSURE (FIELD ADJUSTABLE). IF STATIC PRESSURE AT PSH-1 DOES EXCEED 3" (75mm) THE SUPPLY AIR FAN SHALL STOP. PSH-1 SHALL BE HARDWIRED TO THE SUPPLY FAN VSMC AND UNIT SHALL BE SHUTDOWN IN HAND/AUTO OR BYPASS MODE. PSH-1 WILL REQUIRE MANUAL RESET AT THE DEVICE.

5. HUMIDITY CONTROL

- 5.1 RETURN AIR HUMIDITY SHALL BE MAINTAINED AT SETPOINT OF 35% RH (ADJ.) VIA DIGITAL CONTROL PANEL BY MODULATING CONTROL VALVE V-3 TO MAINTAIN THE DESIRED HUMIDITY AS SENSED BY H-1. THE DCP SHALL OVERRIDE THIS CONTROL TO MAINTAIN HUMIDITY OF 80% AS SENSED BY H-2. DCP SHALL CLOSE VALVE V-3 WHENEVER THE SUPPLY FAN IS OFF.

6. UNOCCUPIED MODE

- 6.1 CYCLE SHALL BE INITIATED AT THE ECC THROUGH A TIME CLOCK FUNCTION. VARIABLE AND CONSTANT VOLUME AIR TERMINAL UNITS SHALL REMAIN UNDER CONTROL AT NIGHT SET BACK TEMPERATURES.
- 6.2 FANS SHALL BE DE-ENERGIZED. OUTSIDE AIR DAMPERS D-1 AND EXHAUST AIR DAMPER D-3 SHALL CLOSE. SMOKE DAMPERS IN DUCTS SHALL CLOSE. HUMIDIFIER VALVE SHALL BE CLOSED AND PREHEAT COIL PUMP FZP-1 AND VALVE V-2 SHALL REMAIN UNDER CONTROL OF THE PREHEAT COIL LOW LIMIT DISCHARGE SENSOR TT-3.
- 6.3 ANY VARIABLE OR CONSTANT VOLUME AIR TERMINAL UNIT SPACE SENSOR SHALL ENERGIZE THE UNIT AND UNIT SHALL OPERATE IN ACCORDANCE WITH WARM-UP/COOL DOWN SEQUENCE INDICATED HEREIN.

7. FREEZE PROTECTION

- 7.1 PREHEAT COIL IN-LINE PUMP SHALL BE ENERGIZED WHENEVER OUTSIDE TEMPERATURE FALLS BELOW 35°F (ADJ.) [1.66°C].
- 7.2 IF THE AIR TEMPERATURE AS SENSED BY TT-3 FALLS BELOW 45°F [7°C], AN ALARM SIGNAL SHALL INDICATE AT THE DCP AND ECC. PREHEAT COIL IN-LINE PUMP SHALL REMAIN UNDER CONTROL. IF THIS TEMPERATURE FALLS BELOW 40°F [4.4°C], AS SENSED BY TSL-1, THE SUPPLY AND RETURN FANS SHALL SHUT DOWN AND A CRITICAL ALARM SHALL INDICATE AT THE DIGITAL CONTROL PANEL AND ECC. AND PREHEAT COIL IN-LINE PUMP SHALL REMAIN UNDER CONTROL. TSL SHALL BE HARDWIRED TO THE SUPPLY FAN VFD AND UNIT SHALL BE SHUTDOWN IN HAND/AUTO OR BYPASS MODE. TSL-1 WILL REQUIRE MANUAL RESET AT THE DEVICE.

8. AUTOMATIC SHUTDOWN/RESTART

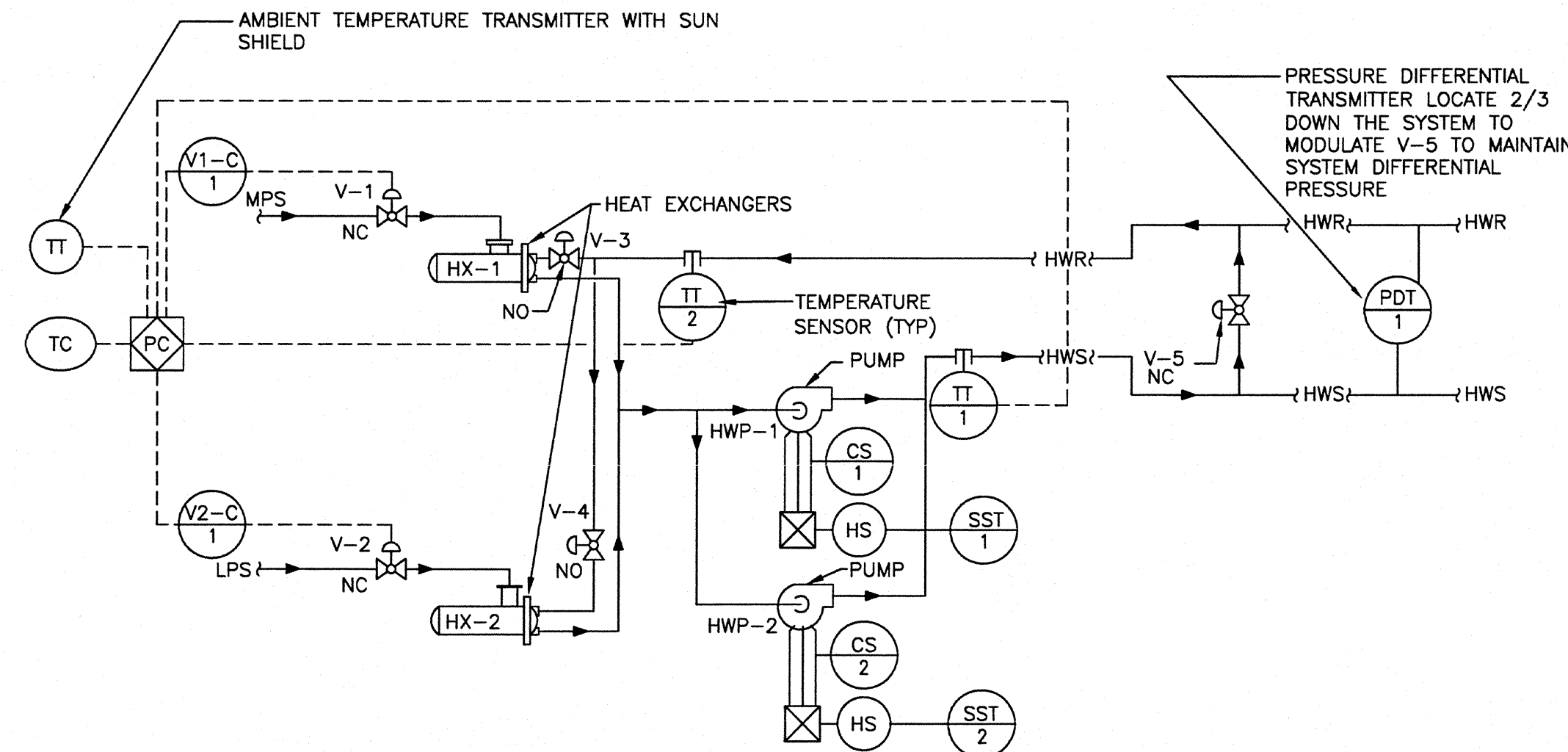
- 8.1 WHEN SMOKE IS DETECTED BY DUCT SMOKE DETECTOR, SD, THE SUPPLY AND RETURN FANS SHALL SHUT "OFF" AND AN ALARM SIGNAL SHALL BE TRANSMITTED TO THE FIRE ALARM SYSTEM. ALL SMOKE DAMPERS IN THE SUPPLY AND RETURN DUCTS SHALL CLOSE.
- 8.2 EXHAUST FANS SERVING AREA OF THE SUPPLY FAN SHALL CONTINUE TO RUN. SUPPLY AND RETURN FANS SHALL RESTART AND SMOKE DAMPERS SHALL OPEN WHEN FIRE ALARM CIRCUIT IS RESET.

9. EMERGENCY CONSTANT SPEED OPERATION

- 9.1 UPON FAILURE OF THE VSMC, THE SUPPLY AND RETURN FANS SHALL BE STARTED/STOPPED MANUALLY AT THE DIGITAL CONTROL PANEL OR THE ECC THROUGH THE BY-PASS STARTER. FANS SHALL THEN BE OPERATED AT CONSTANT SPEED.

10. FILTER MAINTENANCE ALARMS

- 10.1 AN ALARM SHALL BE INDICATED AT THE ECC FOR HIGH FILTER PRESSURE DROP FOR PRE-FILTER PDS-1 AND AFTER-FILTER PDS-2 INDICATING FILTER MAINTENANCE IS REQUIRED.



2 DUAL HEAT EXCHANGER CONTROLS (HEATING SYSTEM)
NTS

SEQUENCE OF OPERATION FOR STEAM TO WATER HEAT EXCHANGERS

SEQUENCE OF OPERATION:

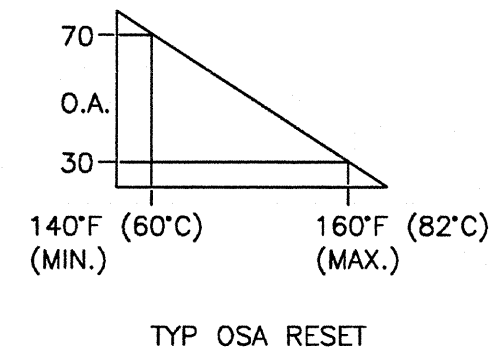
1. STEAM CONTROL VALVE SHALL MODULATE TO MAINTAIN THE LEAVING HOT WATER TEMPERATURE AT SET POINT.
2. THE LEAVING HOT WATER TEMPERATURE SHALL BE RESET INVERSELY WITH THE OUTDOOR TEMPERATURE AS SCHEDULED.
3. THE LEAD AND LAG PUMPS AND HEAT EXCHANGERS SHALL BE SEQUENTIAL BY THE OPERATOR CONTROLS AT THE PRE-DETERMINED INTERVAL (USUALLY 7 DAYS). IN THE EVENT THE PUMP FAILS TO START WITHIN 30 SECONDS, AN ALARM SHALL BE INITIATED AND THE SECOND PUMP SHALL START AUTOMATICALLY.

VALVE SEQUENCE:

1. V-1 MODULATING FULLY OPEN TO MAINTAIN SET POINT TT-1
2. V-2 SHALL MODULATE IN SIMILAR FASHION AS V-1 ABOVE.
3. V-3 AND V-4 OPEN OR CLOSE TO MATCH EQUIPMENT ROTATION SCHEDULE.

SYSTEM DIFFERENTIAL PRESSURE:

1. A PRESSURE DIFFERENTIAL TRANSMITTER PDI-1 SHALL BE LOCATED 1/2 DOWN THE SYSTEM AND SHALL MODULATE 2-WAY VALVE V-5 IN BYPASS TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE.

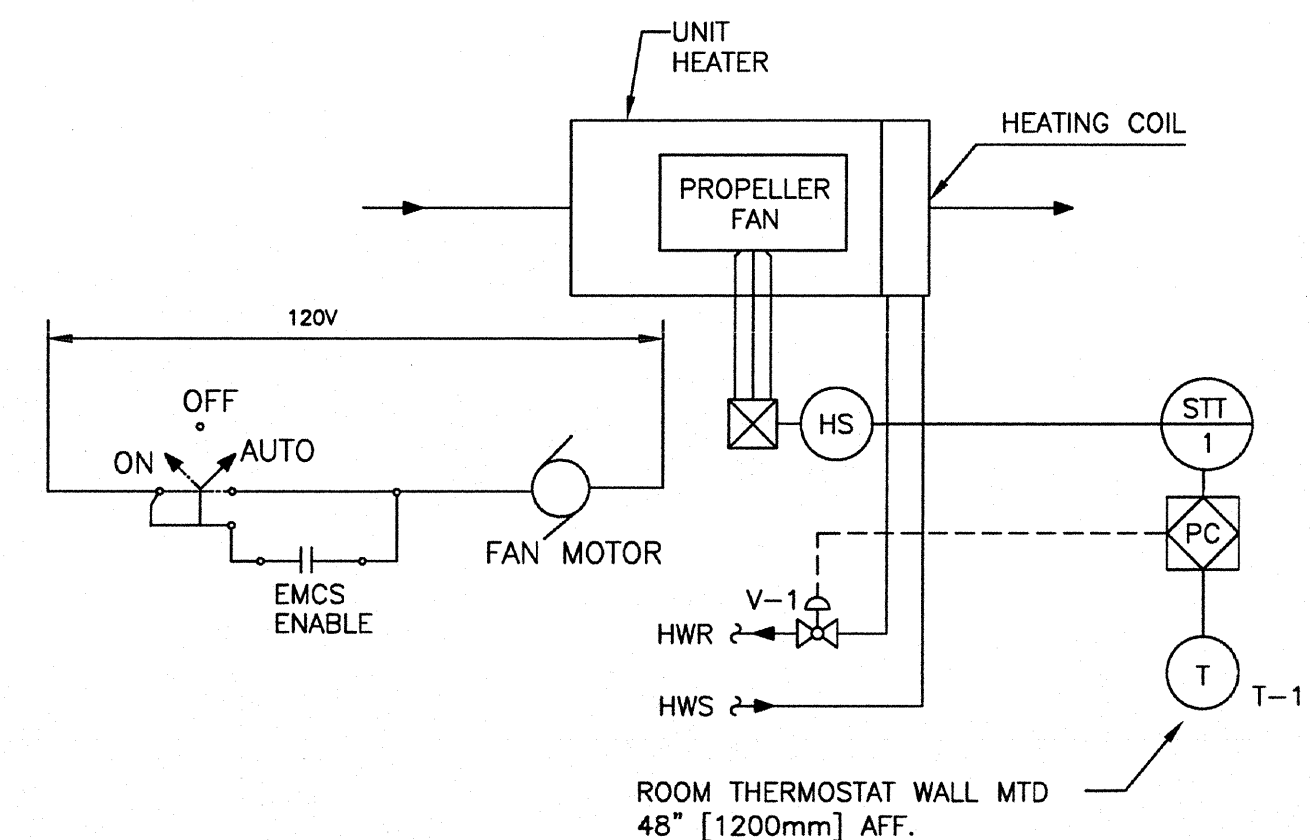


3 EXHAUST FAN CONTROL DIAGRAM
NTS

SEQUENCE OF OPERATION FOR EXHAUST FAN

SEQUENCE OF OPERATION:

1. EXHAUST FAN EF-25 SHALL BE INTERLOCKED BY DDC CONTROLLER TO OPERATE WHENEVER ASSOCIATED AIR HANDLER AHU-25 OPERATES. EF-25 SHALL BE CONTROLLED BY THE SAME DDC CONTROLLER THAT CONTROLS AHU-25.
2. WHEN SMOKE IS DETECTED BY AHU-25 SMOKE DETECTOR, EXHAUST FAN SHALL CONTINUE TO RUN AS INDICATED IN SEQUENCE OF OPERATION FOR AHU-25.



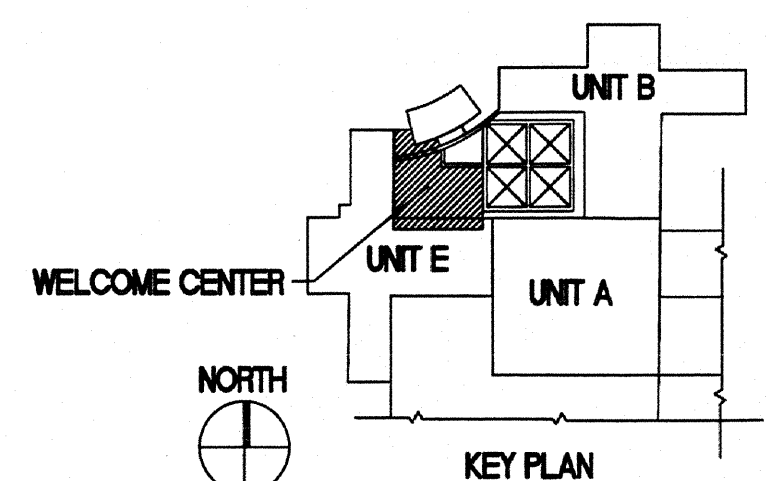
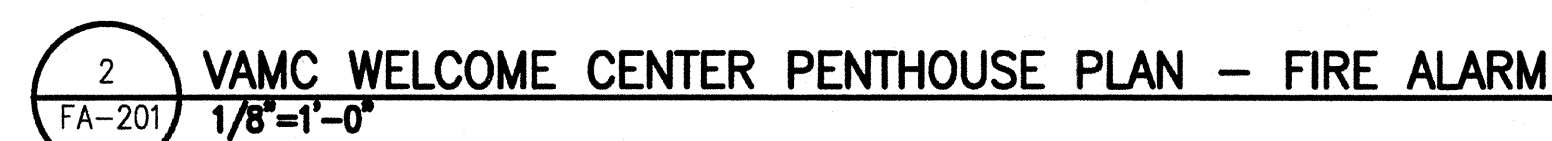
4 HOT WATER UNIT HEATER CONTROLS
NTS

SEQUENCE OF OPERATION FOR HOT WATER UNIT HEATER

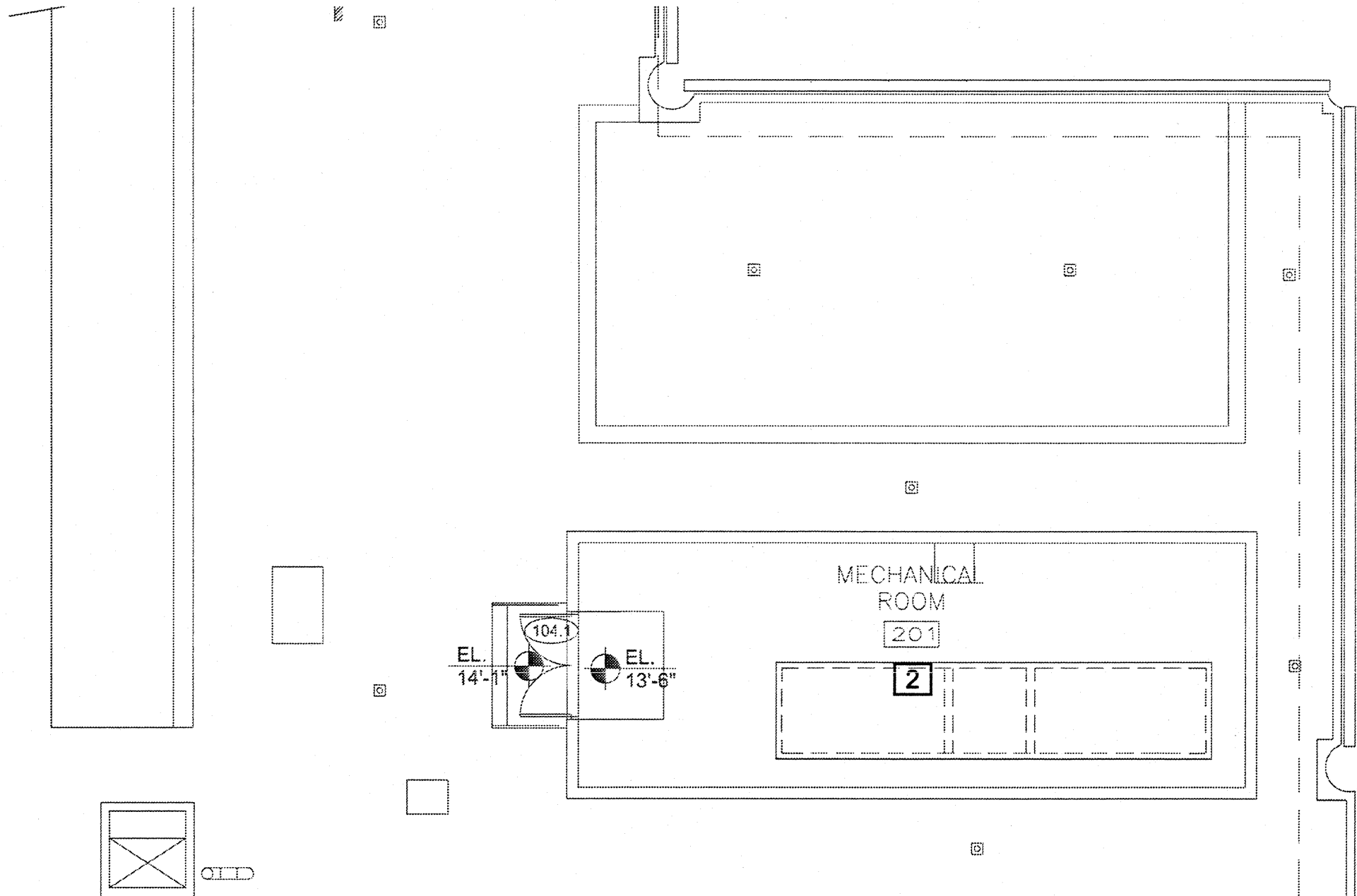
SEQUENCE OF OPERATION:

1. WALL MOUNTED SPACE TEMPERATURE SENSOR T-1 SHALL ON A DROP IN SPACE TEMPERATURE BELOW 55°F (ADJUSTABLE AT THE ECC) DDC CONTROLS SHALL OPEN CONTROL VALVE V-1 AND CYCLE UNIT FAN ST-1 TO MAINTAIN SPACE TEMPERATURE SETPOINT.

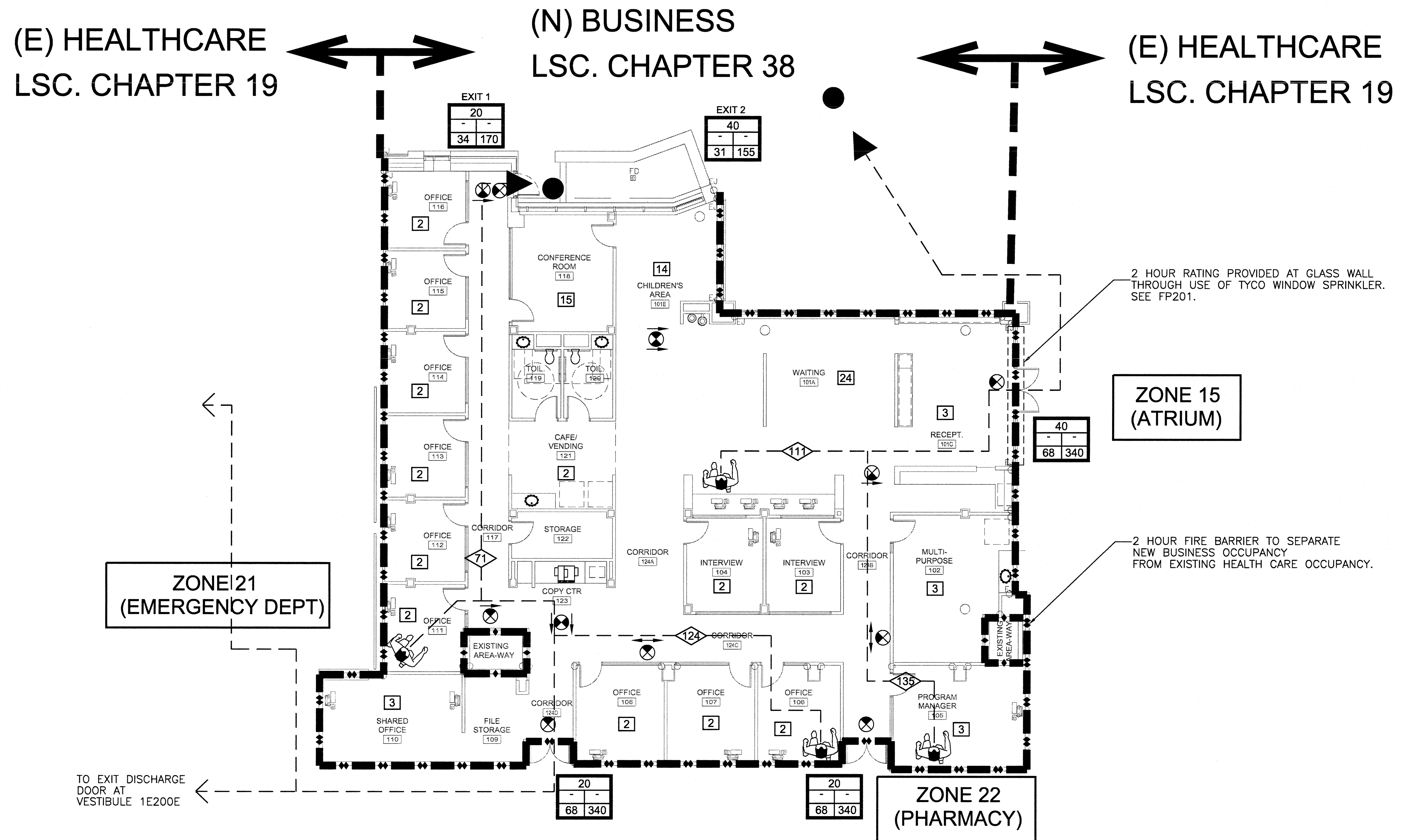
CONSULTANTS: ISSUE 1 - ISSUE FOR CONSTRUCTION 04/30/2018 95% SUBMISSION 02/17/2019 75% SUBMISSION 03/16/2019 95% SUBMISSION 10/29/2020 Revisions:		ARCHITECT/ENGINEERS: EWING COLE 1025 Connecticut Avenue, NW Suite 900 Washington, DC 20036-5405 Tel: 202-467-1500 Fax: 202-296-8950		Drawing Title TEMPERATURE CONTROL DIAGRAMS	Project Title OIF / OEF WELCOME CENTER DEPARTMENT OF VETERANS AFFAIRS VAMC	Project Number 688-334 OIF/OEF Building Number	Office of Construction and Facilities Management Department of Veterans Affairs
				Approved Project Director	Location Veterans Affairs Medical Center 50 Irving Street NW Washington DC	Drawing Number MH-8002 1	
					Date 4-30-2018	Checked GS	

[illegible]

three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
one eighth inch = one foot
one quarter inch = one foot
one eighth inch = one foot
one quarter inch = one foot
one eighth inch = one foot



2 VAMC WELCOME CENTER PENTHOUSE PLAN - LIFE SAFETY



1 VAMC WELCOME CENTER FIRST FLOOR PLAN - LIFE SAFETY

Symbols. / Life Safety

8 OR 100 NUMBER OF OCCUPANTS IN SPACE NOTED WHEN INCLUDING MULTIPLE AREAS

150 TRAVEL DISTANCE

STARTING POINT AND TRAVEL PATH TO EXIT ACCESS

EXIT LOCATION

EXIT DISCHARGE

A B C D E

A = NO. OCCUPANTS USING EXIT
B = ACTUAL STAIR/RAMP WIDTH, IN
C = STAIR/RAMP CAPACITY
D = ACTUAL DOOR CLEAR WIDTH, IN
E = DOOR CAPACITY

1-HOUR SMOKE BARRIER

2-HOUR SMOKE BARRIER

1-HOUR FIRE BARRIER

2-HOUR FIRE BARRIER

SMOKE PARTITION

APPLICABLE CODES AND STANDARDS

International Building Code, 2009, except that structural design is in accordance with the 2006 Edition of the IBC per the VA direction.

Life Safety Code, NFPA 101-2009

VA Fire Protection Design Manual, April 2009

National Fire Codes, 2010 Edition

Uniform Federal Accessibility Standards, Latest Edition

Where conflicts exist between codes, the code specified in the VA Fire Protection Design Guide shall be followed. Fire Protection features not addressed in the National Fire Codes shall be designed to comply with the 2009 IBC or as otherwise addressed in the Design Guide.

Code references listed in the narrative are based on the 2009 Life Safety Code, unless noted otherwise.

USE GROUP AND OCCUPANCY

The Welcome Center will be an addition to the existing building, known as Building No. 1. This building, constructed in 1965, is a Health Care Occupancy and is classified as an I-2 Use Group under the IBC. The entire building is classified this way - there are no separated mixed uses.

The Welcome Center will be separated from the remainder of the building by 2-hour fire barriers. It will be classified as a Business Use and will comply with Chapter 38, New Business Occupancies, under the Life Safety Code.

The Welcome Center will be outside the jurisdiction of The Joint Commission. Under the IBC and Life Safety Code the building would be classified as a separated, mixed-use building.

CONSTRUCTION TYPE AND HEIGHT/AREA

The existing building is identified as a Type IB construction under the IBC and Type II (222) under NFPA 220. Construction type for the Welcome Center will match.

UL Systems for ratings:

Columns: UL X701 or equal

Roof and beams: UL S721 or equal

The existing building is four stories in height, plus a Basement and a Penthouse. Floor area for the First Floor is approximately 175,000 square feet. The Welcome Center will be one story high and will have a floor area of 4,771 square feet.

Under the IBC, an I-2 building of Type IB construction is permitted to be 4 stories high and may be unlimited in area. With the addition of sprinklers, the building height may be increased by one story. A Use Group B building (or section) is permitted to be 11 stories high and unlimited in area.

As a separated, mixed-use, each section of the building would be required to comply with the code requirements for height and area of the more restrictive use group. In either case, the addition is within the limits of the IBC for height and area.

Under the Life Safety Code, Chapter 19 (Existing Health Care Occupancies) a building of Type II (222) construction is permitted to be unlimited in height. There is no restriction on area.

There are no minimum construction requirements or height or area limitations in the Life Safety Code for New Business Occupancies

BUILDING SEPARATIONS

There are no exposing buildings on the site.

FIRE AND SMOKE BARRIERS

According to information obtained from a 1996 Statement of Conditions document the First Floor of the Hospital is a single fire/ smoke compartment. This set of drawings does not show the atrium lobby addition from 1997. Field observations of rated doors and a partial set of Life Safety Drawings dated April 21, 2008 indicate that the atrium space was separated from the remainder of the building (First and 2nd Floors) by a 2-hour fire barrier.

Since the Welcome Center will be a business occupancy without customary access by inpatients, it is proposed that this area be separated by a 2-hour fire barrier from all adjacent portions of the building.

This separation would meet the requirements of NFPA 101 Section 18.1.2.2, and would allow the VA to treat this as a separated occupancy, placing outside the purview of the Joint Commission.

Under IBC Section 508.4 a 2-hour separation is required between I-2 and B Use Groups in order for them to be classified as separated. There will be no interior subdivisions of the Welcome Center.

In order to achieve a 2-hour fire barrier around the interior walls of the Welcome Center, existing walls will need to be upgraded and/or replaced. This includes the existing corridor wall along the south limit of the Welcome Center, and the existing glass exterior walls of the entry vestibule and Atrium.

Where glass walls remain as part of the separation between the Welcome Center and the existing areas of the building, we propose to provide Tyco window sprinklers on both sides of the glazing to achieve the equivalent of a 2-hour separation.

The existing east exterior wall at the Emergency Department Waiting Room and the Police suite is concrete. It will likely provide the required 2-hour rating without upgrade. The exterior punched windows will need to be filled in. UL Systems for wall ratings are indicated on AS601.

There are no incidental hazardous use areas that will require enclosure with fire barriers.

MEANS OF EGRESS

The calculated occupant load for the Welcome Center based on gross area will be approximately 48 people (4771 sq ft 100 sf/ person = 48). Based on actual seat count on the furniture plan, the maximum anticipated occupant load could be as many as 95 persons.

A minimum of two remote exits are required for the Welcome Center. Based on a maximum diagonal distance of 106 feet, exits are required to be a minimum of 36 feet apart.

Minimum door clear width will be 34 inches, giving a capacity of 170 occupants each.

Maximum travel distance from the most remote point within the Welcome Center to the main entrance is approximately 150 feet.

There are no dead ends. Common path of travel is less than 100 feet per 38.2.5.3.1.

Exit access corridors will not be rated as the Welcome Center will be fully sprinklered.

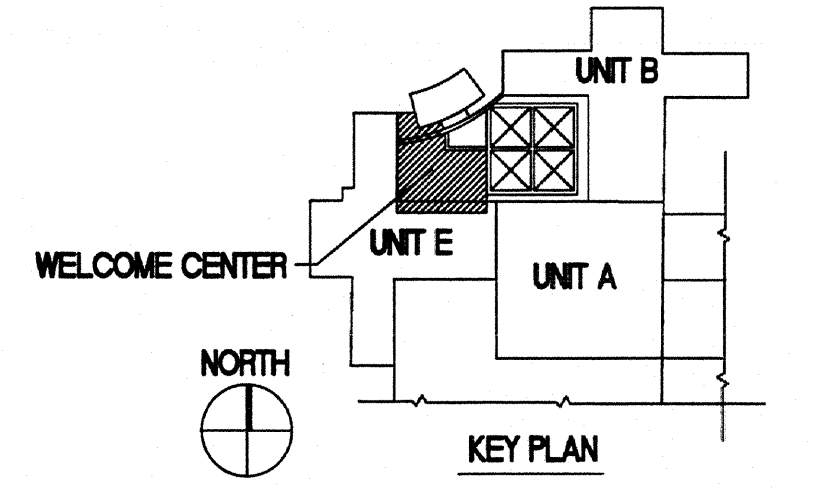
VERTICAL OPENINGS

There are no vertical openings in the Welcome Center. There will be a 2-hour separation from the atrium.

INTERIOR FINISH

Interior finish shall be Class A or Class B in exit access corridors.

Individual rooms may have Class A, B, or C interior finish. (38.3.3)



CONSULTANTS:			ARCHITECT/ENGINEERS:		Drawing Title		Project Title		Project Number		Office of Construction and Facilities Management
					LIFE SAFETY PLAN - FIRST FLOOR		OIF / OEF WELCOME CENTER DEPARTMENT OF VETERANS AFFAIRS VAMC		688-334 OIF/OEF		
				Approved Project Director		Location		Drawing Number		FJ201	
						Veterans Affairs Medical Center 50 Irving Street NW Washington DC		Date		4-30-2013	
								Checked		Drawn	
								JL		KJP	
										Department of Veterans Affairs	

ISSUE 1 - ISSUE FOR CONSTRUCTION 04/30/2013

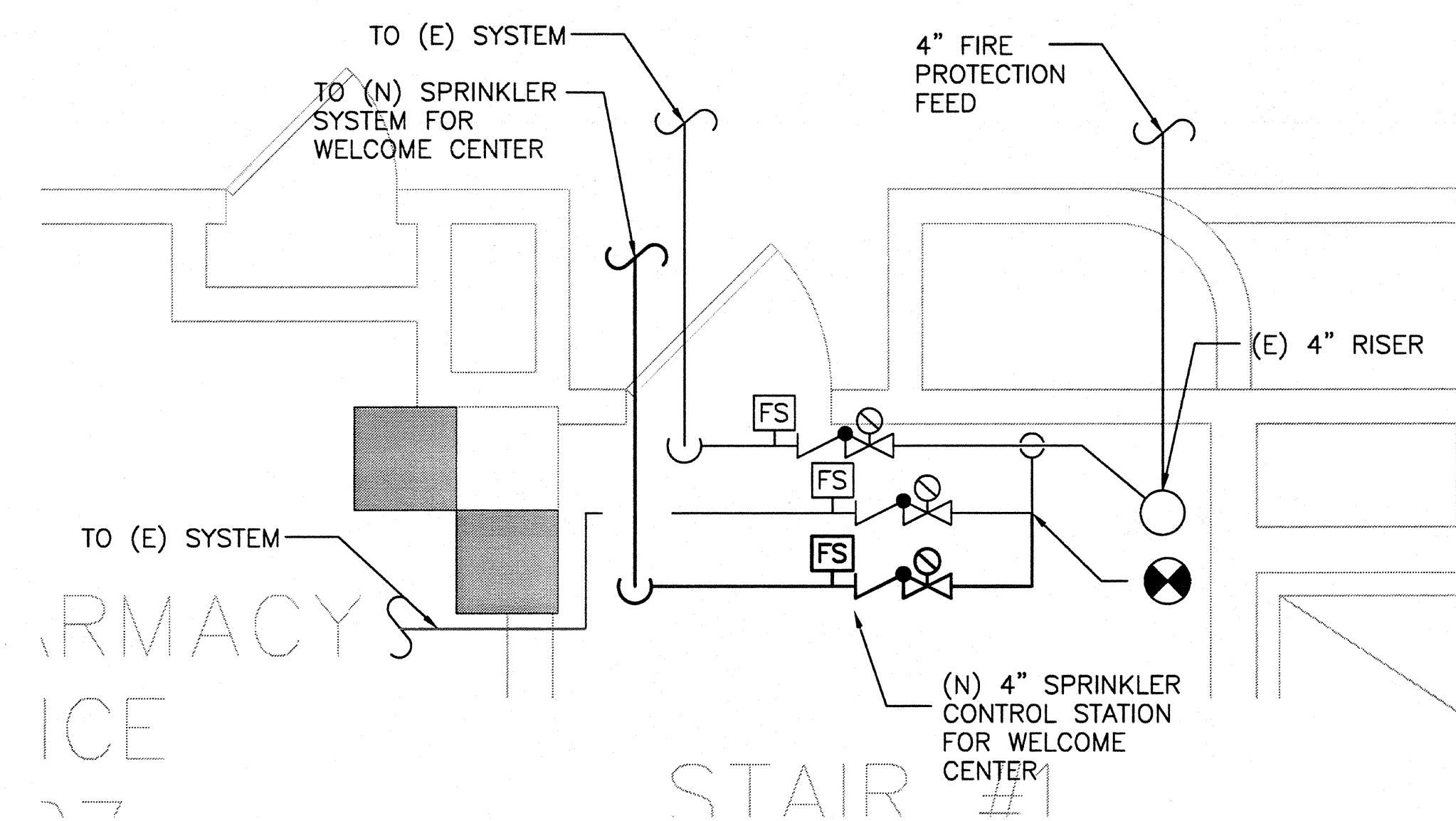
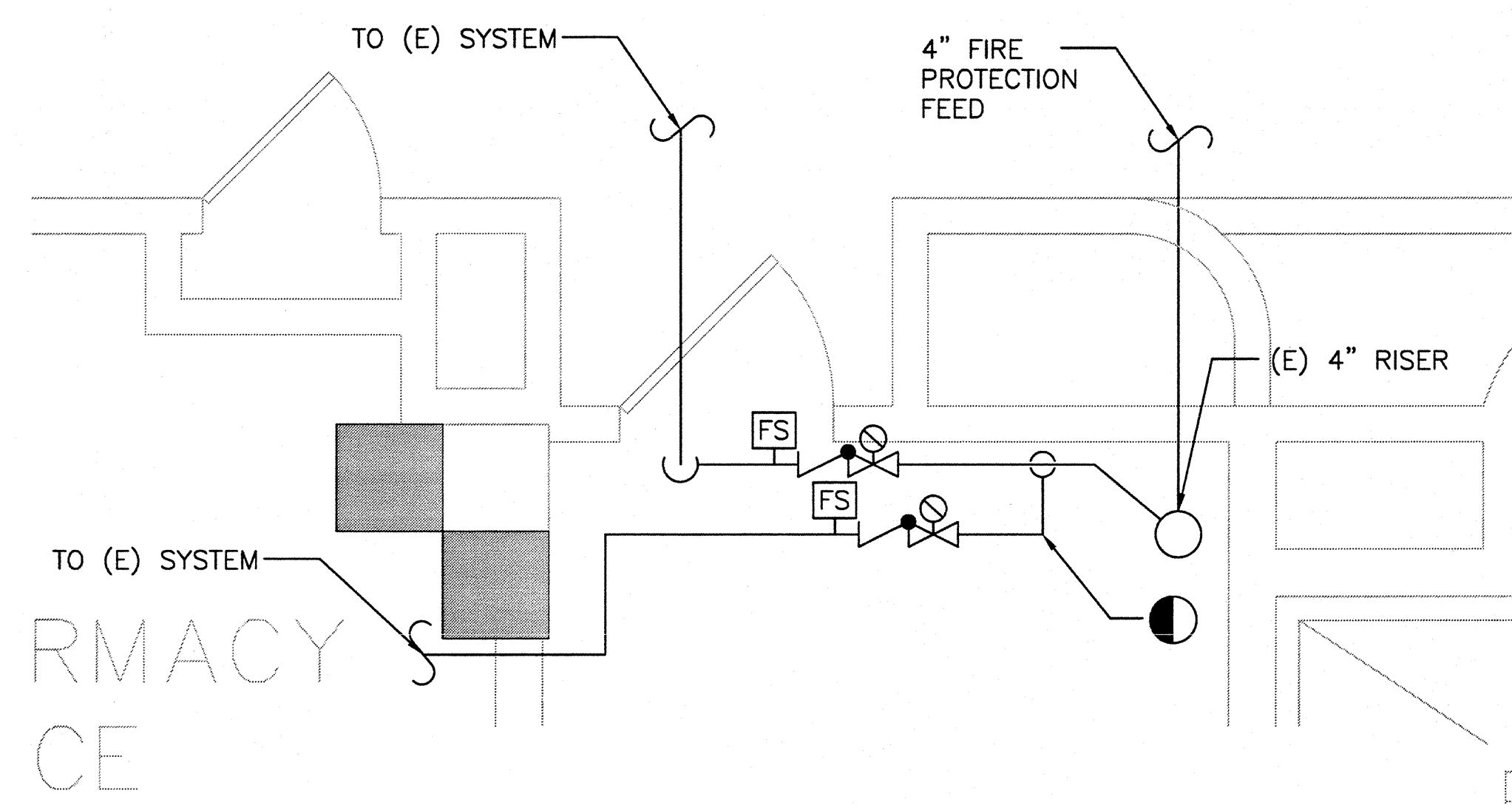
95 % SUBMISSION 02/17/2012

75 % SUBMISSION 03/16/2011

25 % SUBMISSION 10/29/2010

Revisions: Date

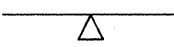
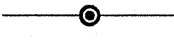
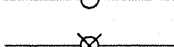
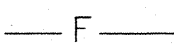

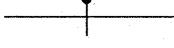
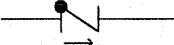

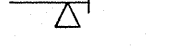
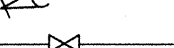



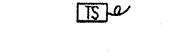
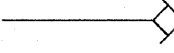
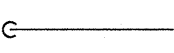
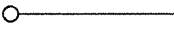
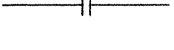




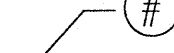


VA FORM 08-6231



3 ENLARGED STAIR #1 EXISTING PLAN - FIRE PROTECTION
FP-201 1/2"=1'-0"

4 ENLARGED STAIR #1 NEW PLAN - FIRE PROTECTION
FP-201 1/2"=1'-0"



- | | |
|---|--|
|  | SIDEWALL SPRINKLER HEAD |
|  | PENDENT SPRINKLER HEAD |
|  | UPRIGHT SPRINKLER HEAD |
|  | DRY SPRINKLER HEAD |
|  | FIRE WATER LINE |
|  | SPRINKLER PIPING |
|  | POST INDICATOR VALVE |
|  | CHECK VALVE |
|  | PRESSURE REDUCING VALVE |
|  | FIRE DEPARTMENT VALVE |
|  | VALVE IN DROP |
|  | SHUT-OFF VALVE |
|  | MONITORED FIRE VALVE |
|  | WATER FLOW SWITCH |
|  | TAMPER SWITCH |
|  | SIAMESE FIRE DEPARTMENT CONNECTION |
|  | SERVICE RISER - DOWN |
|  | SERVICE RISER - UP |
|  | UNION OR FLANGED CONNECTION |
|  | PIPE CAP |
|  | NEW PIPE |
|  | POINT OF CONNECTION
NEW TO EXISTING |
|  | TERMINATION OF DEMOLITION
REMOVAL |
|  | DRAWING NOTE |
|  | SPRINKLER ZONE BOUNDARY (COINCIDES
WITH SMOKE COMPARTMENTS) |

GENERAL NOTES:

1. CONTRACT DOCUMENTS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE ALL OFFSETS, FITTINGS AND COMPONENTS FOR FULLY FUNCTIONING SYSTEM. THE CONTRACTOR SHALL DESIGN AND INSTALL A COMPLETE FIRE SUPPRESSION SYSTEM IN ACCORDANCE WITH THE LATEST EDITIONS OF NFPA 13, NFPA 20, NFPA 24, NFPA 2001, AND CONTRACT DOCUMENTS
2. ALL SPRINKLERS SHALL BE QUICK RESPONSE UNLESS OTHERWISE NOTED.
3. SPRINKLERS IN AREAS WITH FINISHED CEILINGS SHALL BE LOCATED CENTER OF TILE.

DRAWING NOTES :

1. PROVIDE INTERMEDIATE TEMPERATURE SIDEWALL SPRINKLER HEADS IN ROOF MONITOR.
2. PROVIDE TYCO WINDOW SPRINKLERS IN THIS AREA. SEE A303 FOR SECTION.
3. ROUTE PIPE VERTICALLY IN WALL STUD CAVITY UP TO HIGHER CEILING LEVEL. RUN SPRINKLER BRANCH LINE ABOVE HIGHER CEILING AND SUPPORT PIPING FROM ROOF DECK. SEE 5C/A3S302 AND 6C/A3S302 FOR SECTION.

WELCOME CENTER

UNIT B

UNIT E

UNIT A

NORTH

KEY PLAN

				Drawing Title	Project Title OIF / OEF WELCOME CENTER DEPARTMENT OF VETERANS AFFAIRS VAMC	Project Number 688-334 OIF/OEF	<div style="text-align: center;">Office of Construction and Facilities Management</div> <div style="text-align: right;"> Department of Veterans Affairs</div>
				FIRE PROTECTION PLAN - FIRST FLOOR		Building Number	
				Approved Project Director	Location Veterans Affairs Medical Center 50 Irving Street NW Washington DC	Drawing Number	
					Date 4-30-2013	Checked JL	
						Drawn KJP	
						FP201 —	